THRILLING WONDER STORIES

15¢

DEC.

FEATURING

TIME COLUMN

A Novel of Past and Present

By MALCOLM JAMESON

DECADENCE

By RAY CUMMINGS

•

CHRISTMAS ON MARS

By WILLIAM MORRISON

A THRILLING PUBLICATION

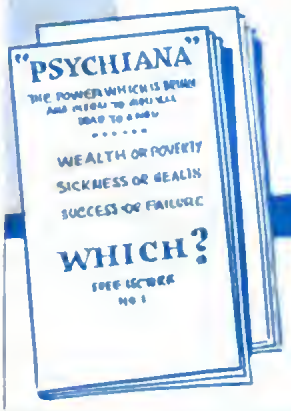
'I TALKED WITH GOD'

(Yes I Did - Actually and Literally)

DR. FRANK B. ROBINSON
Founder "Psychiana," Moscow, Idaho

and as a result of that little talk with God, a strange Power came into my life. After 42 years of dismal, sickening failure, everything took on a brighter hue. It's fascinating to talk with God, and it can be done very easily, once you learn the secret. And when you do—well—there will come into your life the same dynamic, pushing Power which came into my life. The shackles of defeat and fear which bound me for years went a-shimmering—and now?—well, I own control of the largest circulating afternoon daily newspaper in North Idaho. The largest and most modern office building in my City, too. I drive a wonderful Cadillac limousine, and I own my own home which has a lovely pipe-organ in it. Moreover, my beautiful family are abundantly provided for after I'm gone. And all this has been made possible because one day, about 13 years ago, I actually and literally talked with God.

You, too, may experience that strange mystical Power which comes from talking with God, and when you do, if there is poverty, unrest, unhappiness, ill-health, or material lack in your life—well—this same Power is able to do for you what it did for me. No matter how hopeless your life seems to be—all this can be changed. For this is NOT a human power I'm talking about—it's a God-Power. And there are no limitations to the God-Power, are there? Of course not. You probably would like to know how you, too, may talk with God, so that this same Power which brought these good things to me, might come into your life, too. Well, I have written two booklets and I have given them away, FREE, by the millions. As a matter of fact, my strange, almost unbelievable story has been told in 67 different countries, and in every city, town, village and hamlet in America. It has been written up by such outstanding periodicals as TIME, NEWS-WEEK, MAGAZINE DIGEST, and scores of other magazines and newspapers. You may have these two booklets, and you may also have illustrated circulars and letters telling what is being accomplished by your fellow men and women, who, too, have found the Power which comes from talking with God. To get them, without any obligation at all, fill in and mail to me your name and address on the form below. The name and address is Dr. Frank B. Robinson, Dept. 969, Moscow, Idaho. If you ask for your copies of these booklets today, they will be sent you as soon as we receive your request here in Moscow, Idaho.



. . . TWO BOOKLETS FREE!

Fill in your name and address plainly. Mail to Dr. Frank B. Robinson, Moscow, Idaho.

Name .....(Print plainly, please.)

Address .....

City ..... State.....

(969)

J. E. SMITH
President
National Radio Institute
Established 25 Years

I WILL SEND A SAMPLE LESSON FREE

to PROVE I can Train You at Home in Spare Time for

GOOD RADIO JOBS

I Trained These Men

Chief Operator Broadcasting Station

"Before I completed your lessons, I obtained my Radio Broadcast operator's license and immediately joined Station WMPC where I am now Chief Operator." HOLLIS F. HAYES, 327 Madison St., Lapeer, Michigan.

Makes $50 a Week

"I am making around $50 a week after all expenses are paid, and I am getting all the Radio work I can take care of, thanks to N. R. I." H. W. SPANGLER, 1264½ S. Gay St., Knoxville, Tenn.

$5 to $10 Week in Spare Time

"I am engaged in spare time Radio work. I average from $5 to $10 a week. I often wished that I had enrolled sooner because all this extra money sure does come in handy." THEODORE R. DuBREE, Horsham, Penn.

Here is a quick way to better pay. Radio offers you the opportunity to make $5, $10 a week extra in spare time a few months from now and to prepare for good full-time Radio jobs paying up to $50 a week. MAIL COUPON. Get my Sample Lesson FREE. Examine it, read it—see how easy it is to understand. See how I train you at home in spare time to be a Radio Operator or Radio Technician.

REAL OPPORTUNITIES FOR BEGINNERS TO LEARN THEN EARN UP TO $50 A WEEK

Broadcasting stations (882 in the U. S.) employ thousands of Radio Technicians with average pay among the country's best paid industries. Repairing, servicing, selling home and auto Radio receivers (there are 50,000,000 in use) gives good jobs to thousands. Many other Radio Technicians take advantage of the opportunities to have their own service or retail Radio businesses. Think of the many good-pay jobs in connection with Aviation, Commercial, Police Radio and Public Address Systems. N. R. I. gives you the required knowledge of Radio for those jobs. N. R. I. trains you to be ready when Television opens new jobs. Yes, Radio Technicians make good money because they use their heads as well as their hands. They must be trained. Mail the COUPON, NOW!

I'LL SHOW YOU HOW TO MAKE $5, $10 A WEEK EXTRA IN SPARE TIME WHILE LEARNING

Nearly every neighborhood offers opportunities for a part time Radio Technician to make good money fixing Radio sets. I give you special training to show you how to start cashing in on these opportunities early. You get Radio parts and instructions for building test equipment, for conducting experiments that give you valuable, practical experience. You also get a modern Professional Radio Servicing Instrument. My fifty-fifty method—half working with Radio parts, half studying my Lesson Texts—makes learning Radio at home interesting, fascinating, practical.

FIND OUT HOW I TRAIN YOU AT HOME FOR GOOD PAY IN RADIO

MAIL THE COUPON. I'll send you a Sample Lesson and my 64-page book FREE. Learn about my Course; the types of jobs in different branches of Radio. Read letters from more than 100 men I have trained so you can see what they are doing, earning. MAIL THE COUPON in an envelope or paste it on a penny postal.

J. E. Smith, President
Dept. 1NO9, National Radio Institute
Washington, D. C.

BROADCASTING STATIONS (top illustration) employ Radio Technicians as operators, installation, maintenance men and in other fascinating, steady, well-paying technical jobs. FIXING RADIO SETS (lower illustration) pays many Radio Technicians $30, $40, $50 a week. Others hold their regular jobs and make $5 to $10 a week extra in spare time.

Mail Coupon Now!

Extra Pay in Army, Navy, Too

Every man likely to go into military service, every soldier, sailor, marine, should mail the Coupon Now! Learning Radio helps men get extra rank, extra prestige, more interesting duty at pay up to 6 times a private's base pay. Also prepares for good Radio jobs after service ends. IT'S SMART TO TRAIN FOR RADIO NOW!

This FREE BOOK has Helped Hundreds of Men to Make More Money

Mr. J. E. Smith, President, Dept. 1NO9
NATIONAL RADIO INSTITUTE, Washington, D. C.

Mail me FREE, without obligation, your Sample Lesson and 64-page book "Rich Rewards in Radio." (No Salesman will call. Please write plainly.)

Name..... Age.....

Address .....

City..... State.....2FR3

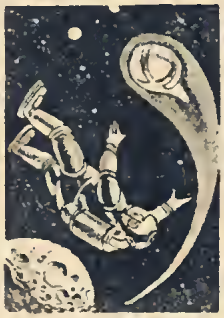
SCIENTIFICTION'S LEADING MAGAZINE

THRILLING WONDER STORIES

The Magazine of Prophetic Fiction

Vol. XXI, No. 2
December, 1941

Next Issue



VIA JUPITER

A Complete Full-Length Novel of the Secrets of Space

By
EANDO BINDER

•

LUXURY LINER

A Complete Novelet of Future Travel

By
NELSON S. BOND

•

FUGITIVE

The Second Story in "The Robot Saga"

By
RAY CUMMINGS

•

Plus Stories by D. D. SHARP, a Prize-Winning Amateur Yarn, and Others!

COMPLETE SCIENTIFICTION NOVEL

TIME COLUMN

By MALCOLM JAMESON

Across the Abyss of Ten Thousand Years Major Jack Winter Leaps to Save the World—and Finds Something Priceless that He has Lost! 15

Thrilling Short Stories

Special Feature

Other Interesting Features

ON THE COVER: The cover painting by Earle K. Bergey depicts a scene from H. L. Gold's short story, WITHOUT ROCKET FROM EARTH

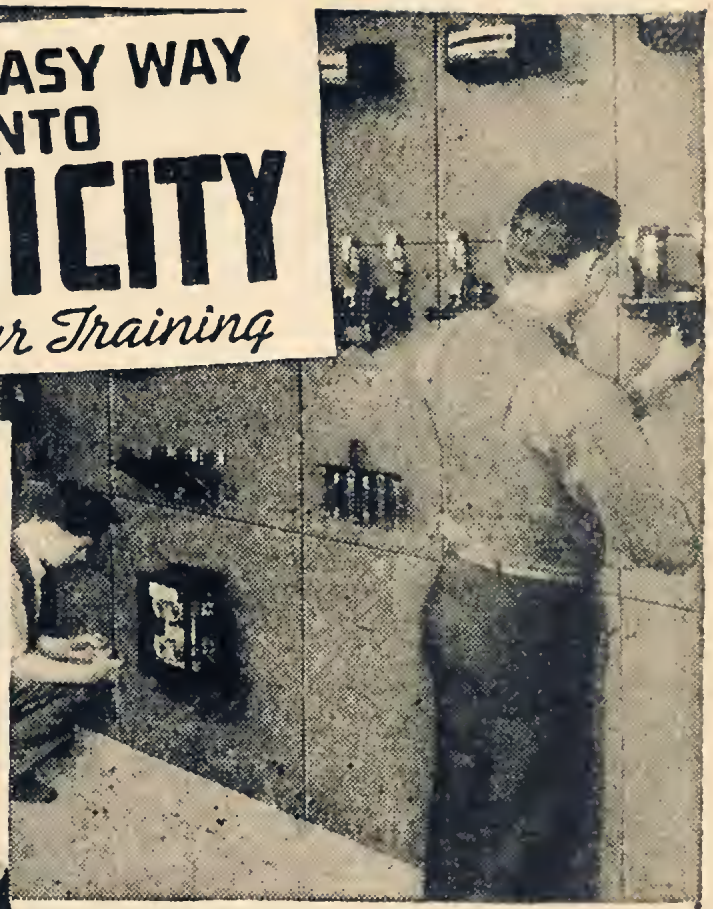
Published every other month by BETTER PUBLICATIONS, INC., 10 East 40th Street, New York, N. Y. N. L. Pines, President. Yearly 90c, single copies, 15c, Foreign and Canadian, postage extra. Entered as second-class matter May 21, 1936, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Names of all characters used in stories and semi-fiction articles are fictitious. If a name of any living person or existing institution is used, it is a coincidence.

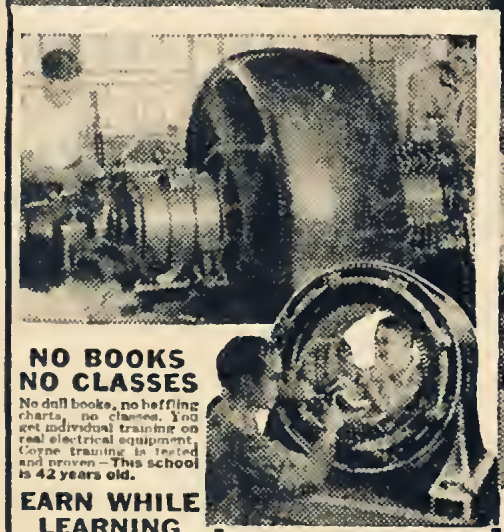
Manuscripts must be accompanied by self-addressed, stamped envelopes, and are submitted at the author's risk.

PRINTED IN THE U. S. A.

AMAZINGLY EASY WAY TO GET INTO ELECTRICITY

I'll Finance Your Training





NO BOOKS NO CLASSES

No dull books, no baffling charts, no classes. You get individual training on real electrical equipment. Coyne training is tested and proven—This school is 42 years old.

EARN WHILE LEARNING

If you need part-time work to help pay your living expenses I'll help you get it. Then, in 12 brief weeks, in the great roaring shops of Coyne, I train you as you never dreamed you could be trained...on one of the greatest outlays of electrical apparatus ever assembled, real dynamos, engines, power plants, autos, switchboards, transmitting stations . . . everything from doorbells to farm power and lighting . . . full-sized . . . in full operation every day!

PREPARE FOR JOBS LIKE THESE

Armature Winder
Sub-Station Operator
Auto & Aviation Ignition
Maintenance Electrician
Service Station Owner
Air Conditioning
Electric Refrigeration
Radio Servicing
and many others

Our Employment Bureau for graduates gives FREE lifetime employment service.

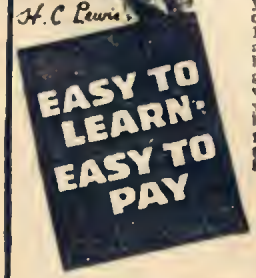
Learn Without Books in 90 DAYS

Get into the fascinating, fast growing, well paid field of Electricity—a field that offers you opportunities and a future—in good times and bad times—a field that is a permanent necessity in prosperity or depression. Here is your chance to prepare yourself for a lasting permanent future.

Here at Coyne, in 90 days, you can train for your Big Opportunity by working on real electrical machinery. Here you learn airplane ignition, wind armatures, learn power plant operation, do house and factory wiring, etc. Coyne training is easy to learn. You "Learn-By-Doing", not by books. Not a correspondence course. You don't need previous experience or advanced education. With this brief description of my school I want to bring out this important fact—you don't need much money to get my training. I have many plans to help the fellow who needs training but hasn't much money. Read all of this advertisement—then mail coupon for all the facts.

GET YOUR TRAINING NOW . . . PAY FOR IT LATER!

Don't let lack of money hold you back. If you are between the ages of 16 and 40, you can get this training first and pay for it in 12 monthly payments—beginning 60 days after your training period ends. You'll be amazed at how little money you need to get Coyne training. If you need part-time work to help out with living expenses while you train, my employment department will help you find it. Lifetime employment service after you graduate. Mail coupon for all the facts.



Home of Coyne Electrical School

MAIL COUPON FOR FREE BOOK

I want to tell you my complete story—how I have helped hundreds of other fellows get good-pay jobs and how I can help you. I want to send you your copy of my Big FREE Book, packed with pictures of students at work in my shops. I want to tell you how you can "Earn while learning" and how I give my graduates free employment service for life. Send for my complete story. No obligation. No salesmen will call. Mail coupon today.

H. C. LEWIS, President
COYNE ELECTRICAL SCHOOL
500 S. Paulina St. Dept. 91-84 CHICAGO, ILLINOIS

H. C. Lewis, President,
COYNE ELECTRICAL SCHOOL,
500 S. Paulina St., Dept. 91-84 Chicago, Ill.

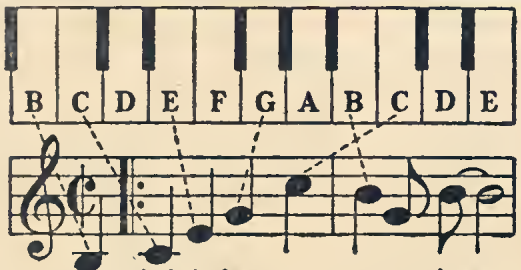
Please send me your Big FREE Book and all the facts about Coyne and your plans to help fellows like me get ahead.

NAME.....

ADDRESS.....

CITY ..... STATE

Play the melody of "KISS THE BOYS GOODBYE" —right now!



Just strike the notes indicated above, and you'll be actually playing the melody of the popular hit tune of Paramount's picture, "Kiss the Boys Goodbye," starring Mary Martin and Don Ameche.

Prove to yourself how easy it is to play the piano or any other instrument

for as little as 7¢ a day

SIT DOWN at a piano right now and see how easily you can pick out the melody of "Kiss the Boys Goodbye," following the simple diagram above. And you can do the same thing with other popular melodies, too, when you use the wonderful "Note-Finder" that guides your hands on the keyboard.

This invention of the U. S. School of Music takes the mystery out of the piano keyboard, does away with tedious study and practice, enables anyone to play a real tune almost from the start. And that's the way this modern method works. You learn to play by *playing*. Soon you will be thrilled and delighted to find that you can pick up almost any piece of popular music and play it at sight. And that applies to the piano or violin, the saxophone or guitar, the accordion or whichever instrument you choose for your own!

Takes Only Few Minutes a Day!

Do you wonder that over 700,000 people all over the world have taken advantage of this easy way to learn music at home? Don't let old-fashioned ideas deprive you of the joys of playing any longer. You don't need special talent; you don't need any previous knowledge of music; you don't need to spend months on monotonous drills and exercises. It's fun to learn music this modern way; it's easy as A-B-C; it takes only a few minutes a day. But see for yourself! Simply send today for our

Free Print and Picture Sample

This Print and Picture Sample will give you the surprise of your life. It will show you, in black and white, how you can quickly realize your dreams of playing your favorite instrument. With the Print and Picture Sample you will also receive a handsome illustrated booklet and details of the remarkable, money-saving offer that enables you to learn music at home for but a few cents a day. All this material will be sent to you by return mail. If interested, mail the coupon or write, mentioning instrument of your choice. Do it *today*. Note: instruments supplied when needed, cash or credit. U. S. School of Music, 29412 Brunswick Bldg., New York City, N. Y. *(Est. 1898.)*

U. S. School of Music, 29412 Brunswick Bldg., New York, N. Y.

I am interested in learning the musical instrument indicated below. Please send me your free illustrated booklet, "How to Learn Music at Home," and the free Print and Picture Sample.

Piano	Mandolin	Trombone	Piano Accordion
Violin		Banjo	Plain Accordion
Guitar	Saxophone	Ukulele	Hawaiian Guitar
Cello	Trumpet	Cornet	Other Instrument

Have You Instrument? .....

Name .....

Address .....

City ..... State.....

☐ Check here if under 16 years of age.

15 Minutes a Day!

Give me just this and I'll prove I can make you

A NEW MAN!

I'M "trading-in" old bodies for new! I'm taking men who know that the condition of their arms, shoulders, chests and legs—their strength, "wind," and endurance—is not 100%. And I'm making NEW MEN of them. *Right now* I'm even training hundreds of soldiers and sailors who KNOW they've got to get into shape FAST!

Only 15 Minutes a Day

Are you ALL MAN—tough-muscled, on your toes every minute, with all the up-and-at-'em that can lick your weight in wildcats? *Or do you want the help I can give you*—the help that has already worked such wonders for other fellows, everywhere?

All the world knows I was ONCE a skinny, scrawny 97-pound, weakling. And NOW it knows that I won the title, "The World's Most Perfectly Developed Man." Against all comers! How did I do it? How do I work miracles in the bodies of other men in only 15 minutes a day. The answer is *Dynamic Tension*, the amazing method I discovered and which changed me from a 97-pound weakling into the champion you see here!

In just 15 minutes a day, right in the privacy of your own home, I'm ready to prove that *Dynamic Tension* can lay a new outfit of solid muscle over every inch of your body. Let me put new, smashing power into your arms and shoulders—give you an armor-shield of stomach muscle that laughs at punches—strengthen your legs into real columns of surging stamina. If lack of exercise or wrong living has weakened you *inside*, I'll get after that condition, too, and show you how it feels to LIVE!

Charles Atlas

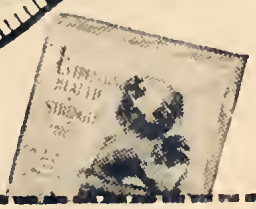
—actual photo of the man who holds the title, "The World's Most Perfectly Developed Man."

Charles Atlas—America's Greatest "Builder of Men"

Among all the physical instructors and "conditioners of men" ONLY ONE NAME STANDS OUT. That name is Charles Atlas!

In every part of the country Charles Atlas is recognized as "America's Greatest Builder of Men." Almost two million men have written to him. Thousands upon thousands have put their physical development into his capable hands!

And now that the call is for men capable of helping America meet and conquer any national emergency, many thousands of others (even those already in their country's Army and Navy) are calling upon Charles Atlas to build the kind of men America vitally needs.



MAIL THIS COUPON NOW!

FREE

This Famous Book that Tells You How to Get a Body that Men Respect and Women Admire

Almost two million men have sent for and read my book. *"Everlasting Health and Strength."* It tells you exactly what *Dynamic Tension* can do. And it's packed with pictures that SHOW you what it does. RESULTS it has produced for other men. RESULTS I want to prove it can get for YOU! If you are satisfied to take a back seat and be pushed around by other fellows week-in, week-out, you don't want this book. But if you want to learn how you can actually become a NEW MAN, right in the privacy of your own home and in only 15 minutes a day, then man!—get this coupon into the mail to me as fast as your legs can get to the letterbox! CHARLES ATLAS, Dept. 77 M, 115 East 23rd St., New York City.

CHARLES ATLAS, Dept. 77 M
115 East 23rd St., New York City

I want the proof that your system of *"Dynamic Tension"* will help make a New Man of me—give me a healthy, husky body and big muscular development. Send me your free book, *"Everlasting Health and Strength."*

Name.....

(PLEASE PRINT OR WRITE PLAINLY)

Address.....

City..... State.....

Bankers Life and Casualty Company

OFFERS THE NEW

FAMILY GROUP POLICY

THAT

Insures Entire Family

The Murray Family, 4712 Leamington Ave., Chicago, Ill.

10 DAY FREE OFFER

•

Mail Coupon!

•

Send No Money

TOTAL COST *Only* $1.00 A MONTH FOR ALL!

Baby-Children-Parents-Grandparents

AS PLAINLY STATED IN THE POLICY

YOUR ENTIRE FAMILY IS INSURED UP TO:

$1,000.00
Maximum—For Natural Death

$2,000.00
Maximum—For Auto Accidental Death

$3,000.00
Maximum—For Travel Accidental Death

The policy is not cancelled by the death of one of the insured members. The benefits are paid and the policy remains in force on the balance of the insured group as long as premiums are paid. Monthly premiums are divided equally between the number insured and benefits are graded according to the attained ages of members insured.

ACT NOW • SEND COUPON!

AGES 1 TO 75 . . . at Same Cost!

This wonderful Family Group policy now gives your whole family safe, reliable insurance, paying benefits for natural death, double amount for auto accidental death, and triple benefits for travel accidental death. One policy, one premium insures all your loved ones—baby to grandparents—*all for only $1.00 per month!*

NO MEDICAL EXAMINATION

We have thousands of satisfied policyholders all over the country, many of whom could not afford to pay big prices. Now YOUR ENTIRE FAMILY can enjoy real life insurance protection. No agent will call. No medical examination, no investigation, no red tape. This remarkable Triple Indemnity policy sold by mail on Bankers Life and Casualty Company's ironclad guarantee. You take no risk.

SEND NO MONEY

Remember, you do not send one cent with coupon—just your name and address, and we send you our 10 Day Free offer and full details. Be sure to write today. Don't put this off. Just mail coupon. No obligation.

NO AGENT WILL CALL

Send coupon quick for full details and our 10 Day Free offer. No obligation or single penny expense to you. Act today for this new low cost family group policy.

MAIL TO GET DETAILS FREE!

BANKERS LIFE AND CASUALTY CO.
Bankers Insurance Bldg., Jefferson Sta., Desk 79, Chicago, Ill.

Please send details and tell me how to get the Family Group Policy for free inspection. No Agent Will Call.

Name .....

Street or R. F. D. .....

City ..... *State* .....

WORLD'S LARGEST DENTAL PLATE MAKERS

FALSE TEETH

$7.95 to $35 by MAIL

SEND NO MONEY!

Posed by a Professional Model

BEFORE

AFTER

Mrs. Elsie Boland of Norton, Kansas, writes:

"Enclosed find two pictures. One shows how I looked before I got my teeth; the other one afterwards. Your teeth are certainly beautiful. I have not had mine out since the day I got them, except to clean them."

Harry Willoughby, Adoirville, Kentucky, writes:

"I have received my teeth and am PROUD OF THEM."

Mrs. Geo. G. Conklin, Bridgeport, Connecticut, writes:

"I received my set of teeth. I wear them day and night. I have good reason to be well pleased with them. Thank you very much."

The foregoing are a few of thousands of unsolicited letters. We do not imply that you will obtain the same results. What is important to you is WE GUARANTEE YOUR MONEY BACK IF YOU ARE NOT 100% SATISFIED.

MADE-TO-MEASURE DENTAL PLATES DIRECT FROM OUR LABORATORY TO YOU!

We make to measure for you individually—BY MAIL—Dental Plates for men and women—from an impression of your own mouth taken by you at your home. We have **thousands of customers** all over the country wearing teeth we made by mail at sensible prices.

AT ROCK-BOTTOM PRICES

If you find out what others have paid for theirs, you will be astounded when you **see how little ours will cost you!** By reading our catalog, you will learn how to **save half or more on dental plates for yourself.** Monthly payments possible.

ON 60 DAYS' TRIAL

Make us prove every word we say. Wear our teeth on trial for as long as 60 days. Then, if you are not **perfectly satisfied** with them, they will not cost you a cent.

WITH MONEY-BACK GUARANTEE OF SATISFACTION

We take this risk. We guarantee that if you are not **completely satisfied** with the teeth we make for you, then any time within 60 days we will immediately refund every cent you have paid us for them. **We take your word.** You are the judge.

HAND-CARVED SET

PARTIAL

ROOFLESS

HIGH-GRADE MATERIAL AND EXPERT WORKMANSHIP

TRY our practically unbreakable ROOFLESS, PARTIAL and TRANSLUCENT plates. Our dentures are set with **pearly-white, genuine, porcelain teeth;** constructed from **high-grade materials,** with **expert workmanship.** We make **all styles** of plates. **A dentist supervises the making of each plate. . . .**

FREE IMPRESSION MATERIAL, Catalog with our new low prices and information. Don't put this off. Do it TODAY! CLIP COUPON OR WRITE. A one cent postcard with name and address plainly written is all that is necessary.

We also Repair or Reproduce Old Plates—48-hour Service

UNITED STATES DENTAL COMPANY

1555 Milwaukee Ave., Dept. C-82, Chicago, Ill.

MAIL THIS COUPON NOW

FREE UNITED STATES DENTAL COMPANY

Dept. C-82, 1555 Milwaukee Ave., CHICAGO, ILLINOIS.

Send, without obligation, your FREE impression material, catalog, and information.

NAME.....

ADDRESS.....

(Print Clearly)

THE STORY BEHIND THE STORY

YEARS ago Science-fiction was considered escapist literature of the most violent sort, creeping into the realm of the written word as a lusty successor to the Yellow-back Novel and the Penny Dreadful. Today that classification not only would be unjust; it isn't so considered in the general attitude of the reading public.

Nowadays folks escape with detective or western or love stories. Science has moved so rapidly to the fore that science-fiction barely manages to stay far enough ahead to be considered prophetic.

In this year of disgrace particularly, 1941, when the world is being subjected to shocking news of daily bombardments, and is changing so rapidly that newspaper headlines become in twenty-four hours as passe as the Mauve Decade, to write science-fiction with any attempt at prognostication is to invite disaster, especially when it deals with present world situations.

Such a story is TIME COLUMN, by Malcolm Jameson. By the time you read these lines international situations may have changed so radically that certain bits of this splendid yarn may read like yesterday's newspaper.

Nonetheless, this is a timely story and is worthy of being remembered long after many political aspects have faded. Here's what Malcolm Jameson has to say about TIME COLUMN:

In common with other decent-minded people, I have been outraged at the spread of international gangsterism throughout the world. I can't hang the men responsible for it actually, but I can in effigy, so to speak. So, in TIME COLUMN, instead of inventing a villain, I borrowed the arch-villain of all history—Adolf Hitler. The probem was to overthrow him.

Now, science-fiction is so full of instances where clever scientists have smashed brutal tyrants that it was hard to find a method that was new. Time travel has always had an appeal for me, so I explored its possibilities as a means of waging war. I found that a flanking movement, carried out through the dimension of Time, was the answer. But since all existing Time machines operate only in one dimension, a problem at once arose.

To attack a place from the rear (in the time sense) the army must be moved to the spot at some prior time and in a way that its movement would not be recorded in history. That involved going back to prehistoric times, which in turn produced a new set of problems dealing with food, supplies, transportation, etc. It was evident at once that the attacking army would have been self-supporting from the moment it was launched. It was also evident that such an army could be quite vulnerable to sabotage.

By pouring all these factors together and stirring vigorously, the answer came out the way it did. The stuff jelled into the TIME COLUMN. Near the end there was one last hitch, and I lost a lot of time thinking up appropriate ways to dispose of the masterminds of villainy. Eventually I sidestepped the issue by adopting the simple expedient of turning the whole gang loose with no one to prey upon but each other. After that, nature presumably took its course—MALCOLM JAMESON.

DAY OF THE ROBOTS

TO JUMP a millennium or two ahead of Nostradamus, let's consider this battered and weary old world at a day so remote from current history that even the prophets and seers have not dreamed of that time. According to scientific computation—laying aside all thoughts of the ultimate result of our expanding universe—Earth, and the Solar System, has a life yet to live of some millions of years. The exact figures are not at hand, and this estimate does not take into reckoning any unforeseen accidents which are incomputable.

But we can dream, can't we? And who has not speculated on the whys and wherefores of the dim and distant future? Ray Cummings has unleashed his fertile imagination and conceived a world which encompasses, not the decadence of any one civilization, but of all mankind. Here is what he says about his trilogy of yarns concerning Robotmania, the first of which appears in this issue:

You suggest that perhaps there may be a story behind the story of my "Robot Saga." Indirectly there is, although not one specific thing. Instead, I think that the idea grew and developed in my mind over a period of many years—most of my life, in fact. For no reason that I can explain, the thought of robots—mechanical beings approaching human mold—always has fascinated me. That interest started, I think, when I must have been no more than ten years old. There was a comic strip current at that time. Even now I remember it well, for it was my favorite.

"PERCY—BRAINS HE HAS NIX."

Such was its glorious title. The hero was Percy, a mechanical man, built, apparently, of various-sized tin cans put together to look grotesquely human. Percy was very short on brains, but he did wonderful things. He was my boyhood idol.

Surely it is a far cry from "Percy—Brains He Has Nix" to the "Robot Saga." But I do think that the general idea of these stories got started then in my childish mind.

A more specific inspiration came about six months ago. With a group of friends I was discussing a mutual acquaintance, a very brilliant, very successful man.

(Continued on page 12)

don't Worry about Rupture

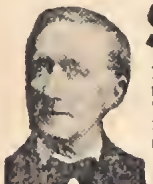
• Why put up with days . . . months . . . YEARS of discomfort, worry and fear? Learn now about this perfected invention for all forms of reducible rupture. Surely you keenly desire—you eagerly CRAVE to enjoy life's normal activities and pleasures once again. To work . . . to play . . . to live . . . to love . . . with the haunting Fear of Rupture banished from your thoughts! Literally *thousands* of rupture sufferers *have* entered this *Kingdom of Paradise Regained.* Why not you? Some wise man said, "Nothing is impossible in this world"—and it is true, for where other trusses have failed is where we have had our greatest success in many cases! Even doctors—thousands of them—have ordered for themselves and their patients. Unless your case is absolutely hopeless, *do not despair.* The coupon below brings our Free Rupture Book in plain envelope. Send the coupon now.

Patented AIR-CUSHION Support Gives Nature a Chance to CLOSE the OPENING

Think of it! Here's a surprising yet simple-acting invention that permits Nature to close the opening—that holds the rupture securely but gently, day and night, at work and at play! Thousands of grateful letters express heartfelt thanks for results beyond the expectation of the writers. What is this invention—How does it work? Will it help me? Get the complete, fascinating facts on the Brooks Automatic Air Cushion Appliance—send now for *free* Rupture Book.

Cheap—Sanitary—Comfortable

Rich or poor—ANYONE can afford to buy this remarkable, LOW-PRICED rupture invention! But look out for imitations and counterfeits. The Genuine Brooks Air-Cushion Truss is never sold in stores or by agents. Your Brooks is made up, after your order is received, to fit your particular case. You buy direct at the low "maker-to-user" price. The perfected Brooks is sanitary, lightweight, inconspicuous. Has no hard pads to gouge painfully into the flesh, no stiff, punishing springs, no metal girdle to rust or corrode. It brings heavenly comfort and security—while the Automatic Air Cushion continually works, in its own, unique way, *to help Nature get results!* Learn what this patented invention can mean to you—send coupon quick!



C. E. BROOKS, Inventor

SENT ON TRIAL!

No . . . don't order a Brooks now—FIRST get the complete revealing explanation of this world-famous rupture invention. THEN decide whether you want the comfort—the freedom from fear and worry—the security—the same amazing results thousands of men, women and children have reported. They found our invention the answer to their prayers! Why can't you? And you risk nothing as the complete appliance is SENT ON TRIAL. Surely you owe it to yourself to investigate this no-risk trial. Send for the facts now—today—hurry! All correspondence strictly confidential.

FREE! Latest Rupture Book Explains All!

Sent You in Plain Envelope **Just Clip and Send Coupon ➡**

Brooks Appliance Co., 182A State St., Marshall, Mich.

PROOF!

Proof of the value and outstanding merit of the BROOKS APPLIANCE is clearly shown by the fact that over 9000 doctors have ordered it for themselves or their patients. One doctor alone has ordered for his patients over 400 Brooks Appliances. Follow your doctor's advice! If he says you have a reducible rupture and advises a proper-fitting support, don't subject yourself to further delay, which may prove dangerons, but send ns your name and address immediately. Stop Your Rupture Worries! Enjoy the comfort, freedom of action and physical security which this made-to-order appliance will give you.

Mail This Coupon NOW!

BROOKS APPLIANCE CO.
182-A State St., Marshall, Mich.

Without obligation, please send your FREE Book on Rupture, Proof of Results, and TRIAL OFFER—all in plain envelope.

Name.....

Street.....

City..... *State*.....

State whether for Man ☐ *Woman* ☐ *or Child* ☐

THE STORY BEHIND THE STORY

(Continued from page 10)

"But there seems to be something lacking in him," one of us remarked. "Something missing, as though he has no heart—no emotions of the heart, I mean."

But that suggestion was squelched as others of us promptly pointed out that he often voluntarily did kindly things, that with his considerable wealth he frequently donated sizeable sums to charity. And then we hit upon what was puzzling us.

He was, seemingly, human perfection—too much so! When he donated to charity, he did it with mechanical perfection, at stated times, with correct percentages to his compiled list of organizations—all based upon a strictly mathematical calculation of his income. When he smoked and drank, it was a calculated modicum of pleasure which at the correct logical moment he allowed himself. He absorbed his religion the same way—not too much, not too little, with his devotions always at the exact proper time and place.

All of us, with enthusiasm now, could name a hundred such things about him. And every one of us really detested him—feared him, perhaps—and certainly none of us felt that we would dare trust him if ever our welfare should cross his.

That argument impressed me very much. I began to see that fellow as a sort of robot—a marvelous, perfect robot. And then it occurred to me that if he were to put his mind upon military problems he would make a grand, ideal leader of the present German Army. And then I got to thinking: suppose that German Army were now to conquer the world? (Heaven forbid!) Could they rule it? Could they rule you and me, and the millions like us—and our children and our children's children?

I knew they could not. And so I sat down and began to write the "Robot Saga," which grew with my thinking into the three linked stories THRILLING WONDER STORIES is presenting.

I hope my readers like them—RAY CUMMINGS.

SNAPDRAGON

AGAIN, in that hazy world of the future, about which all of us are privileged to dream and to people as we see fit, Frank Belknap Long has chosen to envision the botanical pursuit of knowledge on all the planets of the Solar System and how they are of interest to man. In this issue we present the second story of his unique series on John Carstairs, botanical detective of the future. Here is what Frank has to say about SNAPDRAGON:

The problem confronting John Carstairs in **Snapdragon** had me stumped—so completely that I shared the misgivings of Inspector McGuire and was afraid that my fine botanical friend would disgrace himself by biting off more than he could chew. But I underestimated the resourcefulness of that gifted young man. He has solved even knottier problems off the record and his methods are so darned unorthodox at times that I find myself wondering if he is as real as his creator. When I pinch myself John Carstairs always winces, but he is much more resourceful than I am, and can solve problems which would keep me on page six or seven of any story I might write about him.

I'm usually on page seven when he leans over my shoulder with a complacent smirk on his face.

"Long, old boy," he says, "from this point on I'm taking over. Just leave everything to me."

"And if I refuse?"

"You want a story, don't you? If you expect Inspector McGuire to stop cussing, you had better give me a free hand. You've written yourself into a Chinese huddle. How do

you expect to get out of this maze without Snapdragon here?"

Or maybe it is some other plant he has in his hand—from one of the nine planets.

"But we haven't a thing to go on," I say. "The murderer could be an albino with a limp or—"

"Never mind, just step aside. Snapdragon here will get right after the real criminal. You haven't a thing to worry about."

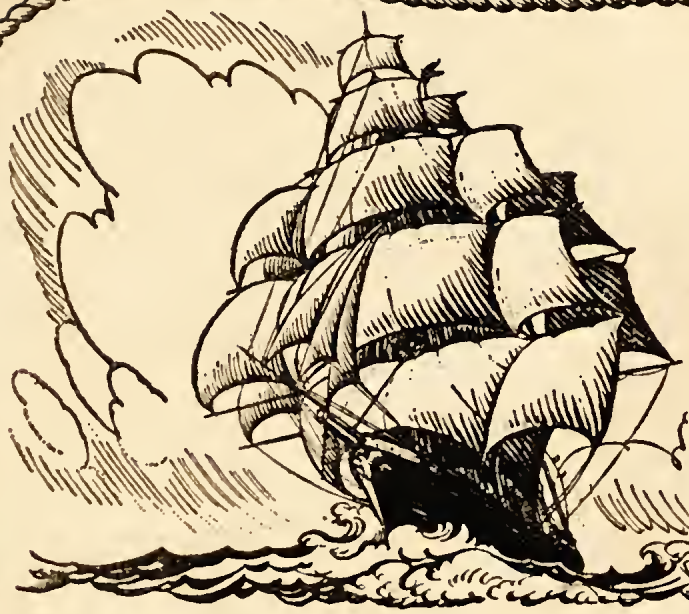
"But look here now, John—"

"Do you want the readers of THRILLING WONDER STORIES really to get wise to you? When they discover that you're stumped by one of your own problems you'll have to quit trying to be an author."

"I know, John, but—"

"If you don't want that to happen, just step aside and let me do the worrying."

So I do, usually. And when the keys stop clicking, I have my story—FRANK BELKNAP LONG.



THE "SOVEREIGN OF THE SEAS" could show her stern to any square-rigger...sailed 1478 miles in four days back in 1853! In those days captains lashed kegs of whiskey to quarterdecks . . . where the pitching motion *rocked* it to smoother flavor.

Try Rocking Chair...smooth and mellow as the wave-rocked whiskeys that inspired it!

RETIRED, these old salts "rocked the keg"—with a rocker replacing the briny deep! Mr. Boston took a leaf from their log! The *Rocking Chair Whiskey* he brings you today was inspired by famous "rocked" whiskeys of yore.

MR. BOSTON RECAPTURES the long-forgotten mellowness of whiskeys "rocked in the keg" *through controlled agitation in his special process of blending.* Get a bottle of *Rocking Chair*—and port your helm for solid enjoyment!

MR. BOSTON

ROCKING CHAIR

BLENDED WHISKEY

86 Proof • 75% Grain Neutral Spirits • Ben-Burk, Inc., Boston, Mass.

TIME COLUMN

Empress Brunhilda's entry was deliberately paced and dignified. (Chap. X)

An Amazing Complete Scientifiction Novel

By MALCOLM JAMESON

Author of "Prospectors of Space," "Deviation Unknown," etc.

CHAPTER I

Amazing Project

HE felt in his change pocket but all he could find were two coins. The sixpence was too small, so he gave the taxi driver the other—a shilling. Then he bounded up the steps of the War Ministry, resplendent in his new uniform of a major of the British Special Engineering Corps.

Major Jack Winter flashed his appointment card on the bobby at the door and passed on in. In a few minutes more he was fidgeting in a chair across the desk from a stodgy major-general. But there was nothing stodgy about the general's mind.

"Ah, quite so," he was saying, "your papers are in perfect order. Moreover, we have many letters from trust-

worthy sources, including the American Embassy, as to your special abilities. That explains why we have commissioned you in the Special Engineering Corps. Although your country is not wholly at war, a number of your immediate companions will be adventurous Americans like yourself."

The old gentleman cleared his throat, resumed.

"You are perhaps wondering at the secrecy thus far preserved. It is now time to tell you. Your corps has been assigned to a very daring undertaking. It is no less a project than the immediate invasion of Germany and the capture of Berlin!"

Major Winter blinked. It was early fall of 1941, and England was still girding herself to resist her own invasion, an event that might occur any day—as soon as Hitler finished his detour through Russia. Such a bold counter-stroke seemed impossible. But all Winter said was:

"Good sir. Count me in."

"You are not stunned—dismayed?" asked the general.

JACK WINTER fingered a spot just over his heart. A small gold locket lay there, out of sight beneath his uniform. It contained a picture

Winter ran past the site of the propulsion rings which were now only shapeless, twisted metal. (Chap. IV)

Across the Abyss of Years Major Jack Winter Leaps to Save the World—and Finds Something Priceless He Has Lost!

Illustrated by
H. W. WESSO

worthy sources, including the American Embassy, as to your special abilities. That explains why we have commissioned you in the Special Engineering Corps. Although your country is not wholly at war, a number of your immediate companions will be adventurous Americans like yourself."

The old gentleman cleared his throat, resumed.

"You are perhaps wondering at the secrecy thus far preserved. It is now time to tell you. Your corps has been assigned to a very daring undertaking. It is no less a project than the immediate invasion of Germany and the capture of Berlin!"

Major Winter blinked. It was early fall of 1941, and England was still girding herself to resist her own invasion, an event that might occur any day—as soon as Hitler finished his detour through Russia. Such a bold counter-stroke seemed impossible. But all Winter said was:

"Good sir. Count me in."

"You are not stunned—dismayed?" asked the general.

Winter ran past the site of the propulsion rings which were now only shapeless, twisted metal. (Chap. IV)

JACK WINTER fingered a spot just over his heart. A small gold locket lay there, out of sight beneath his uniform. It contained a picture of a lovely girl, fair-haired and blue-eyed, looking out at the beholder with frank, brave smiling eyes. Frieda Blenheim had been his fiancée. Two months ago she had died under the axe of a top-hatted headsman in Leipsic.

She had been a music student there when the frontiers were closed against her. Her offense was that of being caught by Gestapo agents in the act of feeding two miserable Polish refugees cowering in her cellar. Treason, they called it, though she was American to the core, despite her heritage of German blood.

"I would go through hell," Jack Winter said harshly, his fierce intensity making the words more like a

Illustrated by
H. W. WESSO

of a lovely girl, fair-haired and blue-eyed, looking out at the beholder with frank, brave smiling eyes. Frieda Blenheim had been his fiancée. Two months ago she had died under the axe of a top-hatted headsman in Leipsic.

She had been a music student there when the frontiers were closed against her. Her offense was that of being caught by Gestapo agents in the act of feeding two miserable Polish refugees cowering in her cellar. Treason, they called it, though she was American to the core, despite her heritage of German blood.

"I would go through hell," Jack Winter said harshly, his fierce intensity making the words more like a

prophecy than the expression of an idle wish, "to get to Berlin. Before I die I intend to find that arch-devil Himmler and wring his scrawny throat with my own two hands."

"Ah," said the stodgy general, a trifle startled at the other's vehemence, "so much the better. Here is a pass which will admit you to the conference now in progress on the floor above. They are discussing the expedition. You have been appointed as special aide to the commander. Your duty will be to look after supply."

"Supply?" echoed Major Winter blankly. "I asked particularly for a fighting job."

"Don't quibble," admonished the old man calmly. "You will find fighting enough where you are going. Take the second door to your left. The meeting has already begun."

Major Jack Winter entered the conference room and stood for a moment in the background, silent. A heated argument was in progress.

"Preposterous, I say!" bellowed an old warhorse, thumping on the table. A bristling white mustache accentuated the redness of his face. Winter recognized him instantly as General Sir Stanley Formley-Higgs, K.C.B., V.C., D.S.O., etc., veteran of many campaigns. He had fought with the Zulus and the Afghans, had seen service in Burma, China and the Sudan. Just now he was nearly choking with indignation.

"It is absurd! Fantastic! Idiotic! I want nothing to do with it! A detour of ten thousand years in time, indeed! What crackpot advanced that idea?"

"I did," Sir Stanley asserted a crisp, cold voice quietly, and Winter noted that the speaker was tall and spare and aquiline, with jet-black eyes. His head was square as a die and topped with a stiff pompadour. He wore civilian clothes, and in his hands was a sheaf of papers.

"Within a few months Germany will be an empty shell, attacked from every side," he went on. "She is already spread out perilously thin over occupied territories, and Hitler's troubles in Russia are just beginning, despite his seeming triumph in Greece and the Balkans. If you could appear suddenly in the heart of Germany with an army, you could roam over it at will, just as Xenophon did in ancient Persia."

"Granted," snapped the general. "If we could only get there."

"I have perfected the machine that will enable you to do it."

"Yes, a time machine!" snorted the florid general. "Har-rumph!"

Winter could not repress a start. This kind of talk was crazy. But was it? In the throes of war the British Empire would not go to the time and expense of assembling a special engineering corps of military experts and squander millions on supplies just to talk about a fantastic dream.

What a stupendous conception! What a staggering idea! If possible, it could revolutionize warfare. It could turn the world topsy-turvy. It was as far beyond Hitler's fifth column tactics as these were beyond the old espionage system. A Fifth Column—through time!

MAJOR WINTER let his imagination roam freely for a moment, envisaging regiments of troops being fed into some sort of hopper or contrivance which would carry them back through the centuries to a time where there would be no opposition—before even recorded history began. He saw these troops making their way across sea and forest and marsh into the heart of wild, primeval Germany, setting up their machinery, and coming back through the centuries to burst forth in the very heart of the enemy's citadel. A detour through time! A Trojan Horse, indeed! A surprise attack that had no precedent in history!

Major Winter leaned forward and touched a fellow listener on the shoulder.

"Who is that man?" he asked in a terse whisper.

The other glanced curiously at his lean, drawn face which still had the marks of recent grief. "Hugh Snyder," he whispered back. "A mathe-

matical genius and inventor. You must be Jack Winter. My name's Kelly. Intelligence."

They shook hands briefly, and turned back to listen. Winter reflected on what little he knew of the man who bore the name of Hugh Snyder.

Hugh Snyder was a shadowy and almost legendary figure who for several years had been whispered about in the highest governmental circles as being engaged in developing a secret weapon that would astonish the world. Until today no one other than a few cabinet officers and the small and select group of technicians who worked with him in his hidden laboratory in Cornwall had actually seen him. Winter looked at him with a new interest. This venture promised opportunities in warfare that he had never thought of before.

"Since our mathematicians have at last found the great fundamental formula which binds energy, matter, space and time together," Snyder was saying, untroubled by the skeptical looks on the faces of some about him, "we are able to state that we can now manipulate matter so as to make it go backward in time and then bring it forward to the present again.

"Time may be regarded as a sort of rut or groove down which matter has already passed. It seems to be continuous to the past, but non-existent as to the future—as the furrow behind a plow. By the use of special solenoids formed of alloys of rare metals we can convert electric current into a curious negative gravitational force which cuts the barriers of past time with ease. Matter placed in its field can be projected at the rate of about a thousand year a second. Even living organisms suffer nothing by it. The only objections are—"

"Yes, yes," interrupted Sir Stanley, testily. "Let's come to those."

"First, the metals needed are scarce and expensive. Besides iridium and tungsten, we must employ several of the rare Earth metals, and their isolation is notoriously difficult. The machines we have just built or which are under construction are all that we can possibly build. Hence the need for their most economical use. Secondly, we have not been able to penetrate the future. Thirdly, owing to the very high speed of travel, a fine control of time movement is impossible. I find that the smallest practicable unit is five thousand years."

"Due to?" queried a member of the General Staff.

"Due to Time Inertia. Enough current to jolt the subject into movement at all will kick it fifty centuries on the same impulse. That may seem to be too coarse a unit, but it really doesn't matter. Our controls are so delicate that by a reversal of the current, the time traversed on the back track will be equal to the other. In jumps of five thousand years or so into the past it is immaterial whether there are a dozen more or less years' error. If the two legs of the journey are equal, the discrepancies cancel out."

THERE was a rustle of papers as Snyder finished. Winter seated himself, exhilarated at the prospect of participating in this daring adventure whose route lay in the uncharted depths of prehistoric time.

The plan was astounding in its boldness and yet so simple! Walls of fortifications meant nothing any longer, such a Time Column could by-pass them and come up inside. Moreover, as an offensive weapon it had no peer. Even should the enemy learn that there were such time-traveling vehicles, they would not know where and when they would materialize and begin spouting men and guns.

Winter listened with keen interest as the details were discussed. He learned that a small test machine had been tried out with experimental flights to the Cornwall of 3,000 B.C. and successful return. The country was reported to be bleak and desolate and without inhabitants, but astronomical observations made by the explorers checked the time range exactly.

They emerged from their return trip unharmed, having been gone exactly the amount of time they had spent in ancient Cornwall plus the

dozen seconds needed for the flight. It was then that GHQ had decided to gamble on the expedition. They authorized the building of as many machines as possible and the detail of picked divisions for the fighting job.

Winter's Engineering Corps was to handle transport, and that he learned quickly, was to be an important job. He began taking notes feverishly, in a glow of burning ambition.

The council went on to talk of fuel and ration problems, since nothing was known definitely about the Britain of fifty centuries before.

An auxiliary army of artisans must be provided to assemble the ships that would be needed in 3000 B.C. to move trucks and tanks and field-guns across the North Sea. Power for the Time machines must be provided at both ends, and there were thousands of other items. Last of all, they close the site for the take-off—a spot in a forest of Scotland, not far from Glasgow. Callandar was the name of the place.

Winter gathered up his notes and got up from the table in high spirits. At last he was about to get somewhere. In America he had raged and denounced as one small nation after another had been tricked or bulldozed into subjection by the Nazis. He had watched the brutal tactics with high indignation.

But when they cruelly murdered his sweetheart, Frieda, he could contain himself no longer. He had thrown up his engineering job and hastened to Canada, begging to be sent to the Front.

Well, here he was, and in what a Front—the Time Column!

He dreamed that night of the occupation of Berlin, of the sudden eruption in its center of an army of angry veterans, of their quick seizure of the nerve centers of the Reich.

That would be enough. The universal wave of uprising among the enslaved peoples of Europe could be counted on to do the rest. It was breath-taking, colossal. And he was part of it!

CHAPTER II

Probing Time

BEYOND Callandar the woods were teeming with activity. Major Winter walked through them, accompanied by Captain Kelly, the brigade's intelligence officer. Everywhere there were shops and factories or assembly plants, carefully camouflaged by bough-decorated low roofs. Gasoline storage tanks abounded, and the finishing touches were just being put to an electric generating plant for the Snyder Time-Shuttle.

Hugh Snyder himself, the dark and taciturn inventor who had spoken so forcefully at the conference in London, joined them. He was a queer and cold sort of codger, Winter thought, somehow not as friendly as the major had figured at the conference.

"These are the propulsion rings for the Class-B machines," he said, pointing to a long row of metallic hoops laid on brick piers.

A bank of transformers stood close by and electricians were completing the hookup. Alongside the first of them a gang of welders were busily assemblying a huge steel sphere from orange-peel-shaped plates. When finished, the sphere would have a diameter of about fifty feet.

"The rings are expensive, containing as they do many pounds of rare and costly metals, but at that they are far more efficient than the other system for transporting large quantities of material," explained Snyder.

"What other system?" asked Kelly.

"The use of Class-A machines, the self-propelled ones," the inventor replied. "So far I have built only one of those, though there is one other under construction. They are the same size as these spheres, but have less carrying capacity, owing to the necessity of having to carry their own generating plant. Moreover, their cruising range is only some fifty thousand years. After that the elements have to be renewed, and since those are chiefly platinum and irid-

ium, we can afford to build only a few. We must use these sparingly.

"On the other hand, the Class-B units are inert. They proceed through time much as a batted ball does through space. We place them within these rings, load them, then throw an impulse of power through the rings. They at once disappear and rematerialize thousands of years in the past. To send them back to the present, of course, it is necessary to have another set of sending rings at the other end. On such an expedition as this, such a complementary station at the other end is perfectly practicable."

"Yes," commented Winter. "I remember the general plan. But when do we start, and for where? Where is that completed Class-A machine?"

"I am taking you to it now. We will get in and take a run back to prehistoric times to pick the site for the other base."

They went on in silence. Winter noted that a number of tanks had already arrived and were parked in groups of three and four, awaiting loading into the time transports. In another place he saw stacks of steel

plates, nicely curved and punched for rivets, which was to be sent back in time and erected to serve as storage tanks for the immense amounts of gasoline to be needed by the army.

There were machine tools, too, and small blacksmith's forges, field kitchens, mountains of cases of canned goods, and much else. It was a little awesome to see assembled in one spot just a fraction of the stuff required to maintain a considerable army in the field for half a year or more. And he was responsible for a big part of this.

The Class-A time machine was a silvery sphere with no ports and but a single circular door which, however, was wide enough to admit a ten-ton truck or the fuselage of a small fighter airplane. Winter's quick eye took in at once that such a plane was already loaded inside the machine, its detached wings neatly laid alongside it. Its pilot stood beside the door, talking with the several men who were to go along to re-assemble it.

"All set, Miller?" inquired Snyder sharply.

"Yes, sir," replied the aviator. "Everything is ready."

SNYDER inspected the interior of the sphere, testing a tube there and a connection in another place. Then he closed the door.

"You will experience a few queer sensations, but there is nothing about them that will hurt you. Time velocity is impalpable. What you will feel will be a sort of earthquakish vibration as the ship adjusts herself to the rise and fall of the ground level through the ages."

Major Winter watched him closely as he set the starting lever. A gauge above the power bank calibrated to 50,000 years registered full. The speedometer over the operating desk registered zero. Snyder put the lever in the first notch and pressed a button.

Winter and Kelly felt a slight surge, followed by a trembling that sent electric thrills through their frames. There was a moment of nausea, an instant's blindness, then a sharp jolt.

"Not bad, eh?" And the ordinarily scowling and silent Snyder allowed himself a wry smile. "We're there."

"Where?' chorused several shaky voices.

"On th same spot in Scotland, only five thousand years ago," answered Snyder. "Get out and have a look at three thousand years before Christ."

They clambered solemnly out, looked and gasped. The forest was gone. Everything was gone. All about them was only a grassy plain. The mountains in the distance were no longer familiar of shape, being harsher—more rugged. A frightened doe rose from the grass and scampered away. A bevy of startled birds fluttered upward with raucous cries and joined her flight. Of human habitation there was no sign.

"Looks okay," said Major Winter, taking over and affecting a calm that he was far from feeling. "But it would certainly be a devil of a spot in which to have a breakdown. Trot out the plane, boys, and put it together. We'll take a short hop and look around."

Queer thrills were making his spine tingle. It was uncanny to be assembling a super-modern airplane in the Bronze Age. He found it hard to believe this was real or himself more than a figment in a weird dream.

Yet a few hours later he and Kelly squeezed themselves beside the pilot in the tiny two-seater. He was beginning to like Kelly very much. The plane was a special job by Grumman with low speed and no armament, but having a goodly cruising radius. They set her motor humming and shortly were over the highlands to the north of them. The country below appeared to be virgin country. There was neither a crude man-made shelter nor a wisp of smoke to be seen.

"Take a turn in the opposite direction, Miller," ordered Winter.

The pilot obediently headed south. They crossed the Clyde, circled northern England and came back north along the east coast. It seemed to them that the east coast was farther east than it should have been, and much less indented. The Firth of Forth had narrowed to a rivulet.

It was not until they were nearly back to their starting point that they saw the first vestige of humanity. Atop Stirling Rock they spotted rectangular designs, and swooping low, they saw that these were the crumbling ruins of a habitation of some sort, gone to ruin untold centuries before.

Then, about ten miles beyond, they sighted a solitary human figure sitting on a stone and idly watching a flock of some dozen sheep.

"A man!" yelled Winter. "Set her down, Miller."

IT was an old man, haggard, long-bearded, and almost naked. His only garment was a brief skirt of plaited strips of fur, faintly suggestive of the kilts of plaid that were to follow four thousand years later. When the plane grounded a few hundred feet away from where he sat, he only lifted his head. He looked on apathetically as the three men approached him, showing neither surprise, fear nor pleasure. He simply sat, staring at them woodenly.

"Hard-headed Scot," commented Kelly. "He isn't human."

Kelly, who was a linguist, addressed the ancient Breton in several languages, but got only a sullen silence for a reply. He plied him with pure Gaelic, and finally elicited a couple of sour grunts. The three officers sat down in a semi-circle while Kelly persisted in his attempts at communication.

After fifteen minutes the intelligence captain managed to get somewhere, dragging coarse gutteral sounds in bursts of two or three words from the old man's throat. Then the conversation began to proceed a bit more smoothly. At last Kelly sat back and reported what he had elicited from the incurious old man.

"He says he thinks he is the last man alive. It has been twenty years or more since he saw another human being, and that was when his wife and sons were taken by the terrible sickness—obviously a plague which swept across Europe. He does not know what the ruins on top the rock represent—perhaps a castle of the giants who ruled this country thousands of winters before his own race began.

"Legend has it that they were a fierce and warlike people and built houses that floated on the water. They preyed on other people who lived in a vast land on the other side of the sea, out of which the sun rises, bringing back many captives and other booty."

"What became of them?" asked Winter.

There was more painful interrogation. The old shepherd had not used his meager vocabulary in years.

"He says no one knows. There was an old tale about a sickness that killed ninety-nine out of every hundred. The gods, as he calls them, then fled to the northland where it is always ice. He thought our plane had been sent by them to take him to Valhalla. That is his story."

"*Hmmm*," mused Winter. "I guess it's lucky in a way we stopped where we did. It would complicate things for us enormously if we had to fight our way through pre-Norsemen, and look out for an unknown plague to boot. Let's leave the old guy alone and report back to Snyder. He'll be anxious to get his machines started on this time shuttle."

They returned to their starting place to become panic-stricken. There was no Snyder, and more alarming, no time-machine. There was only an indentation in the grass where it had been, and a small mound of stuff beside it. The three officers left the plane and ran over to the pile. It proved to be a pup-tent, a few cooking utensils and two cases of assorted grub. There were three hunting rifles, too, and ammunition for them. That was all.

"Marooned, by Jupiter, in Time!" yelled Miller.

Winter looked at Kelly, and Kelly looked at Winter.

"Hold it, chappie," said Kelly quickly, his own lips white.

"What do *you* think of this fellow Snyder?" asked Winter bluntly.

Kelly shook his head.

"Personally, I haven't doped him

out yet. Intelligence has combed his pedigree from A to Z and they say he's regular, but somehow the more I see of him the less I like him. Take the malevolent way he stares at you. Take this . . . "

"Yes, this," thought Winter, with an involuntary shudder. Three men and a few supplies alone in a depopulated country, five thousand years away from their own era and kind. Far off, beyond the forests of primeval Europe and the Mediterranean, there was an alien civilization in Egypt under the first pharoahs and in the valley of the Tigris. Those crude peoples, he recalled, were not hospitable to strangers. They made slaves of them, or sacrificed them to their gods.

Why had Snyder abandoned them?

"I agree with you," he said aloud, making an effort to pull himself together. "When I heard him explain his machines in London that day, I was fairly well impressed, but somehow since—"

THE sound of a distant shot caused him to quit speaking. All three of them wheeled and looked toward the quarter from which it came, hope stirring in their hearts. For an ancient gunshot was impossible. The Chinese hadn't invented gunpowder yet.

Then they saw the crew who had assembled the plane coming through the high grass. One had a doe on his shoulder. Apparently they had been hunting to while the time away. When the mechanics arrived, they brought the explanation of Snyder's abrupt disappearance.

"Oh," said one of them, "Colonel Snyder said the site looked okay, so he took off alone. Said it would save hours getting the expedition started. The Class-B machines ought to start coming pretty soon.

"Hm-mph!" snorted Winter suspiciously, glancing at Kelly. "I still don't like it. That was a report we were supposed to make."

That night he tossed on his cot and tried to think it through, but somehow he could not put his finger on the source of his suspicions. It was only that there had seemed to enter Snyder's attitude toward the expedition a subtle change for the worse. That was the incomprehensible thing about it.

He had invented the means and had fathered the idea, yet lately, when watched at moments when he was off guard, he seemed contemptuous of it, almost sneering. It was that sly change of manner that was so baffling.

In the morning, though, the fleeting uneasiness of the little pioneer group seemed silly. They were awakened by the sound of howling Klaxons, and sprang from their blankets to see a number of the Class-B machines dotting the field about them, with others materializing every moment. Several were disgorging their passengers. Men in uniform or dungarees were swarming out, and presently a captain came up and saluted.

"Reporting with the first consignment," he said. "Inside is a duplicate set of the propulsion rings in sections ready to be hooked up. We brought along a knocked down powerplant to run 'em so we can shoot the empty spheres back home. Where do you want 'em, Major?"

"Five hundred yards to the left of where the containers lie," directed Winter, putting last night's doubts out of his mind.

Inventors were queer people. The explanation might lie there. In any case, his own job was not intelligence, but transport, and no man in the Time Column was more anxious to get to Berlin than he. There was still a sea to cross and miles of forest to traverse before another set-up was made.

He walked over to show the engineering sqad where to set up the generating unit. Kelly followed him, grinning.

"The Time Column is on the march," said the Irishman. "Think of it, Jack—pingpong across the centuries, with fifty-foot spheres for balls!"

"I am thinking of it," said Winter grimly.

But he was thinking of Leipsic in 1941—and Frieda Blenheim.

CHAPTER III

Treachery?

IT took three days to erect the plant and get it working. Major Winter had occasion to pat himself on the back many times for the completeness with which he had worked out his supply schedule. He had made few errors of calculation.

The first of the spheres held a donkey boiler, a pair of electric generators, a transformer, and all the tools and accessories needed to put them into operating condition. The next group was loaded with the nested arcs of the projector hoops that needed only coupling together and being put on suitable foundations. After the second group, more of the Class-B machines kept popping into sight every few hours—as fast as the receiving area was cleared—bringing bricks and mortar, more workmen, galvanized iron and studding for the shacks to be built; and more important to the men on the ground, food supplies and a first-class camp cook.

It was Winter himself who fired up the boiler, using fuel oil from the drums that had come with it. A score of the empty time-travel spheres were already in place on their propulsion rings. As soon as his generators were up to speed, he cut in the circuits one by one and watched the steel globes vanish, bound back to the year 1941.

"Hold everything, Jack," said Kelly, after seeing the fifth one make its shimmering disappearance. "Shoot me back in the next one. Any message for the folks up there?"

"Yeah," grunted Winters. "Send down my mail, and a batch of late newspapers. This business of fighting a war at five thousand years' range is duller than I thought. And tell that bird Snyder to leave me a note next time he does a quick fade-out. That first night here was a nightmare."

Kelly grinned, nodded and stepped into the machine. Five seconds later, according to the watch on his wrist, he was walking out of it into the Twentieth Century. A sentry saluted him and called his attention to a sign nailed to a nearby tree.

WARNING! KEEP CLEAR OF THE PROJECTORS, AS TIME SHUTTLES MAY MATERIALIZE AT ANY MOMENT.

He pulled aside to allow a file of troops to pass him. They marched straight into the machine he had just vacated until the officer with them called "enough!" There was a flicker, and the machine disappeared. The expedition was beginning to move in earnest!

"Down below," as everyone was beginning to call it, Major Winter and his gang worked ceaselessly throughout the daylight hours. When nightfall came they would throw themselves on the grass, exhausted, while a night shift took over. These men tended the two propulsion rings that handled the gas transport.

Every hour a sphere filled with high test gasoline materialized and had to be connected to one of the two pipelines that led down the slope to where the great storage tank had been promptly erected. The motorized equipment already in use required great quantities of fuel, above which consumption it was necessary to build vast reserves.

Meanwhile, Lieutenant Miller in his plane scouted the eastern shoreline and found a suitable harbor in which they were to launch the motor-driven barges then being prepared in sections at what would some day be Clydebank. Those would be the last things to come down.

Pine forests had first to be located, trees cut and dragged by tractors to the harbor. A gang of workmen had already established an advanced camp there and was building several sets of pile-driver leads against the day when the pines should arrive and they could construct the docks.

Back at the main base, Winter's growing crew had built storehouses, into which carloads of hams, barrels of salt meat, flour, beans, coffee and

sugar were being carted daily. Cigarettes were regarded as a necessity, and those came in large quantity. Another storage tank was being erected at the harbor and a pipeline between it and the one at Main Base laid.

GENERAL WORREL, the rather fatuous commander of the entire expedition, marveled at the efforts of the indefatigable young American. He, like the overseas young man, nursed a private grievance against the Nazis, as well as cherishing the universal indignation caused by Hitler's arrogance toward the rest of the world.

His home in London had been gutted by fire and half the members of his family killed. He was not sure where the others were. All members of the British Time Column took joy in their work, knowing that every hour was bringing them closer to the day of reckoning. Overtime spent in greasing the skids for Messrs. Hitler, Himmler, Goebels, and their gang was a positive pleasure.

"This is a remarkable maneuver, all right," said Worrel one day, "and magnificent in its simplicity.

"The only thing that troubles me is that for a time we will be cut off from two-way communication with 'up there'. It is a pity we haven't one of the Class-A type machines back here."

"Yes," agreed General Worrel thoughtfully, "but they are very expensive. The partly finished one is all we are going to get. There is no more material. But why do we have to be cut off?"

"Because the shuttles require rings and power at both ends," explained Winter. "As soon as all our stores are accumulated and we are ready to cross the sea, they will ship down the remainder of the rings for us to take them with us. After we have moved our expedition to the site of Twentieth-century Berlin we will need every one of them for the sort of surprise mass attack we have in mind. The tanks, infantry, and the propaganda experts who are to take over the Axis radios and spread the news must be sent up promptly. After the victory we can send back for the technicians and laborers."

Worrel nodded. He could see the difficulty of keeping in touch with GHQ.

"The final plan will be sent down by the second Class-A machine," he commented. "After it comes, we will leave Scotland altogether. From then on we will have to move blind on a strict time schedule."

Yes, time was the essence of it. The Battle of the Atlantic was growing critical; the night bombings were making a wasteland of England. Speed was everything.

It was for that reason that when the order came an hour later, via Captain Kelly, from General Sir Stanley Formley-Higgs with orders for Major Winter to come 'up there' on the first morning shift of shuttles and enjoy a week's leave, Winter raised his eyebrows in astonishment. He was not only surprised but angry. He had too much to do to take leave.

"What the devil does this mean?" he growled.

"Oh, that," said Kelly mysteriously. "That is my doing. I took a long shot and hit. I signed your name to the application."

"What!" stormed Winter, "at a time like this?"

"Take it easy and listen." Kelly dropped his voice and took the precaution to go outside and take a turn around the tent to be sure there were no eavesdroppers.

"I have just now been sent down here to stay. But friend Snyder is still 'up there', ostensibly seeing to the final touches on the number two machine. Every day he goes off to Clydebank, where it is building but I had my men tail him repeatedly. He doesn't go to Clydebank often. Usually it is to Edinburgh where invariably he has shaken his trailers.

"He knew he was being followed and squawked to GHQ—said it was a slur on his honor. So they telegraphed me to lay off and sent me down here. I don't like it. I tell you, there is something about Snyder that smells."

"What has that got to do with *my* taking leave?" demanded Winter. "I'm no sleuth. If your men couldn't tail the guy, how—"

HE broke off questioningly.

"He knows I'm off the case," said Kelly, and Winter was impressed by his earnestness, "and he is not so likely to be suspicious if he bumps into you. You can go and come with a freedom I never had. Maybe the brass-hats know all the answers, but I won't be easy about this show of ours until I know why Snyder goes to Edinburgh when he says he goes down the Clyde."

"I see. What else have you got on him?"

"I went into his room one day and noticed he suddenly clamped his left palm shut. I got him excited and he began gesticulating. I finally had a glimpse. His palm was plastered inside with lampblack and tiny specks of unburned paper."

"Oh," said Winter, comprehending. "He'd just burned a secret message."

"Exactly. I tried to trace that but all I could learn was that a porter had brought it from a dirty tavern called 'Jock o' the Heather' in Edinburgh. You'll find it in a twisty lane in that run-down district behind the Castle. It's a dive, the sort of dump you wear old clothes to and leave all but your silver money at home. Now, if a fellow with nothing to do, like a soldier or sailor on leave, should decide to go there and hang out..."

"I get you," said Winter slowly. "You want me to spend my week's leave haunting this joint, trying to get the lowdown on Snyder."

"Yeah," yawned Kelly. "And a week's fling after this grind won't hurt you, either."

"Done," said Winter, because he had never ceased to wonder over the subtle change that had come over Snyder since that first day in London.

FINDING the "Jock o' The Heather" was not such a tough assignment. Winter simply prowled the district, exploring the maze of lanes and alleys, until he stumbled upon the tavern, and a miserable, dirty place it proved to be.

A slatternly barmaid was presiding when he entered. She regarded him with obvious disapproval, spilling half his ale when she served it. But he pretended to be half-tipsy, appeared not to notice, and wavered off to a nearby dark booth to consume the bitter stuff.

He stayed all afternoon, even feigned sleep for awhile, holding his head down on the stained, black old table. Later he appeared to revive and had a drink of whiskey. After a little jollying and some mild flirtation, the bar girl relaxed her hostile attitude a little, and a couple of bluejackets from a cruiser laid up at Rosyth joined him in his booth. Thus, he became accepted as a respectable barfly.

It was not until the fourth night of his leave that he saw or heard anything of interest. By that time the habitués of the place had pegged him as an U.S. sailor from whom they

[*Turn page*]

could cadge occasional drinks. His speech was so broadly American, and his habit free but not lavish of spending, that he was unmistakably stamped as a friendly outlander. Whatever the occupations of those who frequented the place, they had come to feel that he was a stray of no consequence to them.

By the time that fourth night rolled around, Winter was moodily doing nothing but sitting in a black corner, guzzling booze and thinking of Frieda behind his newspaper.

Then his vigil was at last rewarded, and the hand that held the edge of the evening paper trembled just a little.

On the other side of the room, in another booth, sat Snyder. With him was a rough-looking civilian Winter had never seen before. Snyder himself was in civilian clothes, despite regulations to the contrary. He had been granted a colonel's commission, out of gratitude for his marvelous invention.

They were talking earnestly in low tones.

Winter noticed that though the place was fairly crowded and many drinkers were standing, none of the usual hangers-out made any effort to occupy the two other empty seats in Snyder's booth.

Winter shifted his position so he could peek between the chairs and see beneath the table, taking good care at the same time to keep his own face partly shielded by his newspaper. His neck was stiff and his patience threadbare by the time he saw what he waited for. Two hands stole forward, met on touching knees. Fingers wriggled and something white and flimsy passed from Snyder to his companion. That was all.

Shortly thereafter Snyder got up, stretched and yawned elaborately, and left the place.

Winter waited a discreet ten minutes, then called the girl to settle his reckoning. Snyder's companion seemed to have the same idea and at the same time. But Winter got the worst of it.

The barmaid was maddeningly deliberate, and the other man beat him out the door by a full minute. When Winter got out into the black street there was no one to be seen in any direction.

A swift run to each of the adjacent corners revealed nothing. In a darkened city and in the rough, cobble-paved alleyways that twisted and intertwined like the snakes on the Laocoön group, finding a man with a minute's start was a sheer impossibility.

Jack Winter sighed and gave up the chase.

THE next morning he stayed at the base at Callandar. In the afternoon he strolled through the forest and watched idly as the workmen loaded machine-guns and ammunition into the shuttle spheres. A few of the motor-barge engines were beginning to go down.

Within another two weeks, the expedition could begin its trek to primeval Germany.

He encountered Colonel Snyder, standing near the number one Class-A machine, which had been used for the single trip to the year 3,000 B.C. The inventor was scowling at it, as in deep meditation, the outcome of which he did not like.

"Big night in town last night, Colonel?" asked Winter casually.

Snyder wheeled, still scowling. Then he smiled in an oilish fashion.

"On the contrary," he replied, with a remarkable show of good will for him. "I wish I had. But I was held up the whole day long by those *dummkopf*—those dumb-bells at Clydebank. They are taking an insufferable time to assemble my other machine. Claim that tungsten is hard to get now, and that the government has shut down on iridium. It may be weeks before they deliver it. I was so tired when I left that I took a room in a Glasgow hotel and spent the night there."

"Too bad," commiserated Winter. "I had better luck, myself." The other leered understandingly, then stalked away. Major Jack Winter looked after him, and his lip curled.

"You dirty liar," he was thinking. "Now I *know* you smell!"

CHAPTER IV

Cut Off!

JACK WINTER turned in that night, still debating just what further steps he could or should take. Officially his hands were tied. He finally dropped off to sleep with the problem unsolved.

It was well past midnight when the air raid siren sounded. But it was too late to drive the raiders off, for the Nazi pilots had a perfect picture and understanding of their objective. A steady droning roar furnished an awful obligato to the detonation of bursting bombs and the hammering of ack-acks. The bombs fell like rain, and the effect was devastating, soul-shattering — and deadly in the uncanny accuracy.

Great trees were uprooted, splintered to fine shreds and flung about like match sticks. Buildings were ignited by incendiaries, springing into full flame as though they had been previously soaked with oil. Fires lit simultaneously at a hundred places. Terrific, blinding, destroying concussions swept the camouflaged forest area in every direction. Bugles blared, men ran for bomb shelters, the anti-aircraft guns hammered away. But it was futile. This base had depended more on secrecy and camouflage than armament and RAF units for safety. The accuracy of the raiders was uncanny; the havoc and carnage were awful.

Jack Winters staggered awake, blinking. Callandar Base was being blasted into ruins around him. If the attack kept up another ten minutes nothing would be left of this vital surface base. But how? Then Jack Winter had a wild thought. Could this bombing raid be the result of that paper he had seen Snyder slip to the ruffian in that Edinburgh tavern? But that didn't make sense. Snyder was here, too. Would he have risked his life in such a mad scheme?

The idea was preposterous. It didn't fit at all with Snyder's original plans to enable England to execute a huge military maneuver by way of a Time Column.

Hastily Winter pulled on his clothes and ran out into the lurid night. One place was as safe as another, and he had to see what damage was being done. In a minute there was respite, as the second wave of bombers passed over. Then Winter managed to get on into the forest.

Already the damage was immense. It was easy to see. Even the power house was burning brilliantly. In another area the flaming general storehouse gave a terrible illumination. A crescendo of noise overhead warned of the coming of the third and final flight of destroyers.

Winter ran past the site of the propulsion rings where a source of the shuttles had been in the process of loading. The spot was hardly recognizable. The rings had been hopelessly warped or torn apart and flung in every direction. Only shapeless, twisted metal and yawning, smoking craters marked the place from which Main Base had been fed. Groaning aloud in his anguish, Winter found temporary shelter under an overturned tank body.

As he cowered there, stopping his ears against the deafening crash of the bursting, rending bombs, the full enormity of the catastrophe came to him. This meant that all the assembled equipment here was lost, and to figure the correct inventory and await its replacement would mean all sorts of delay. And to Winter delay was maddening.

He wanted to drive ahead, to get to Germany—to avenge Frieda Blenheim and all of suffering humanity that had felt the blight of that same withering hand of the demon.

Nor was this all. The rate of the invasion of the Time Column into modern Germany had been cut in half. For the rings were practically irreplaceable. Worst of all was the fact that the enemy had smelled out this base. This raid was of the magnitude of that one over Coventry—and on an innocent looking forest. The Nazis *knew*. And there would be other raids.

He caught sight of a figure skulking in the trees ahead, darting occasionally from one to another. The figure was tall and spare and wore the jacket of a colonel. It was Snyder, and the man was sobbing in his rage.

Winter sprinted after him and was almost on him when he saw him step out from under the deceptive shelter of a tree and shake his fist angrily at the planes in the roaring heavens. Then he ran on, never seeing Winter.

Winter, puzzling over this queer act, followed the inventor. He stumbled and fell. He scrambled to his knees and saw that Snyder was making for the Class-A Time-traveler, which by some miracle had thus far escaped destruction. Winter grabbed up the bar of iron that had tripped him and ran after.

He was not quick enough to overtake his man before Snyder reached the machine. Snyder climbed in and began closing the door behind him. Winter thrust the iron bar forward and inside far enough to prevent its being shut. Snyder tugged and swore, but the door would not close.

"Not so fast," shouted Winter. "I'm going with you."

Snyder recognized him and surlily opened the door. He looked not only angry but frightened as he closed the door and set the travel lever in a notch. Then he reached for the starting button.

"No you don't," snarled Winter, and his fist landed clean on Snyder's jaw.

The thin man went down, out cold. Winter glanced again at the travel lever. It was in the third notch, not the first, which would have stopped them at Main Base.

He changed the setting, and then, as the inferno of explosions recommenced outside and successive concussions rocked the ship, Winter pressed the button himself. The machine vibrated sickeningly, and then all was quiet. Nineteen forty-one was five thousand years in the future.

Snyder was coming to. He dragged himself groggily up onto an elbow, then sat up and began to rub his jaw.

"Fool!" he growled, "I was trying to save the machine, and you struck me—your superior officer!"

"Yeah?" was the answer. "It may interest you to know that I was in the 'Jock o' the Heather' last night."

"So?" said Snyder, regaining his customary calm and speaking quite smoothly. "Are you intimating that *I* was there, too? That, my friend, is something you cannot prove."

"Neither can you prove I struck you," was Winter's quiet rejoinder. Just what is your game, Snyder? You are of German ancestry, I know. But you voluntarily contributed your invention to Great Britain."

"They why do you question me?" said Snyder haughtily.

And Winter had not the answer to that one.

There was a bitter and hostile silence between them as they walked across the field at Main Base toward the General's quarters. It was near dawn when they got there, but they woke him up. He received them sleepily, sitting on the side of his bunk and running his hands through his tousled hair as they talked.

Snyder, as his rank permitted, made the first report. He stated simply that there seemed to have been an unexpected chance air raid and that his only thought was to save the invaluable Class-A machine from a bomb hit.

"That is a lie," blurted out Winter, furious at the casual manner of the other's report. "It was a devastating, planned raid, with hundreds of planes coming over in at least three waves. As nearly as I can make out there is nothing left 'up there'. There has been treachery, sir, but I am not prepared to say from what quarter."

"Ah, well," said the general, yawning, "those things happen in wartime. We cannot always have smooth going. There is nothing we can do about it tonight. Tomorrow we will take it up in council."

WORREL lay back on his bunk and pulled up the blanket, signifying the interview was at an end.

Winter bit his lip. There seemed

nothing to do but withdraw. Snyder saluted stiffly as if to follow. But when Winter got outside and looked around, the inventor was not with him. Winter glared at the door venomously, shocking awake the drowsy orderly who stood before it.

"The senile old fool!" he said to himself. "Why did they have to drag a man out of retirement to head a jam-up expedition like this? He's the uncle of some Lord Something-or-other on the distaff side, I suppose."

He listened for a moment, but all he could hear was the faint mumble of voices. He could not guess at what Snyder was telling now and he had no pretext to re-enter the place. He turned dejectedly and went to his own quarters where he related to Kelly all that had taken place.

"It's tough, agreed Kelly, "but Snyder's position seems as impregnable as his actions seem impossible. My fingers have been slapped, and so will yours be if you have nothing more positive to offer than this. We have a couple of bits of uncorroborated circumstantial evidence and a flock of vague suspicions. GHQ believes in the man, so does Sir Stanley, and reason says we ought to. So unless we can pin him down with cold facts we're licked before we start."

Winter wearily pulled off his blouse and made ready for bed.

"We've got odds enough to fight on this stunt without having to deal with sabotage and favoritism," he complained bitterly. For two cents I'd—

"Skip the two cents and come to bed," advised Kelly. "One stink is enough, and tomorrow is another day. We've got the guy with us back here now. All we have to do is stay on his trail and not tip our hands any more than we have. Sooner or later we'll trip him up if he is guilty."

The morning's conference was a stormy one. The more the problem was discussed the more acute it appeared. Most of those present agreed that the intensity of the raid was proof that the Nazis knew of the existence of the base. They could be expected to follow it up with others at definite and regular intervals.

As long as these persisted, it was a reckless waste to send up units of the time traveling equipment. For the shuttles would be useless without propulsion rings to send them back, and all those left in 1941 had been destroyed. Even if the B.T.C. should send up some of their own sorely needed units to replace them, a topside power plant would have to be rebuilt.

"I can take the Class-A machine and go up to reconnoiter damages," offered Snyder.

"No," objected Winter, speaking out hotly despite his relatively junior rank. "It's time capacity was only fifty thousand years and we have already used up fifteen. If we use another ten now, and ten later, we will have only enough to make a single reconnaissance to Berlin when we get there. The extra trip you propose would use up our margin of safety. As much as we dislike it, we must wait—or otherwise go on as we are."

Several of the senior officers nodded in agreement with him. He listened with grim satisfaction as the vote was taken and it was decided to wait at least a few days for a possible contact from 'up there'. Perhaps not all the rings or power lines had been destroyed. Perhaps the second Class-A machine would be finished soon. Meantime he watched the sour visage of Snyder, who clearly did not relish having his proposition turned down.

MAJOR WINTER by that time realized keenly how silly and baseless his and Kelly's suspicions of Snyder must seem to those in authority, but he was still convinced that the man was doing everything he could to wreck the B.T.C. He did not mean to let him slip away until he had solved the mystery. Winter leaned over and whispered to Kelly that hereafter they must keep a sharp watch over the parked Time-Traveler, and the intelligence officer nodded grimly.

The council went into a discussion as to ways and means if it were found they were cut off indefinitely. Winter sat staring at the table, and a tumult of

questions kept plaguing him.

Snyder had invented the machine. Snyder had sold the War Office on using it. Snyder had been commissioned and sent along with the expedition. Then he had subtly changed his attitude. He went off on strange, secret trips to dark rendevous. He sent and received notes that had to be burned. Winter was convinced that he had had prior knowledge of the air raid and had tried to escape it by jumping back in time—not to Main base, but beyond. Now he was trying to duck again. Why?

If he had been loyal in the beginning, which was obvious, what had brought about the change? Threats? Bribes? The Gestapo was skillful in the use of both. Yet if he had been a Fifth Columnist, why had he given Britian so unique and valuable a weapon of war?

Was it simply to divert and waste the rare metals so sorely needed elsewhere, not to mention the other stores and equipment and men employed? That did not make much sensc either. It was too cheap a price for so epoch-making an invention.

A deep frown furrowcd Winter's brow. His mind began to play with a new theory. Supposing Snyder was really a Nazi agent, could it be that the invention was a German one which had been thoroughly tested and found to contain secret defects that would prove fatal in the end? It might appear workable and pass all superficial tests, and the British could be expected to snap at it as a golden opportunity. They would squander men and invaluable material on it only to lose them. This was a plausible theory, another example of the diabolical cunning employed by the Nazis in international intrigue. Yet Winter knew he could not prove a single item in his indictmcnt.

"Why do we have to sit herc and twiddle our fingers?" General Worrel was demanding. "If they have smelled out the topside base and blasted it once, they will do it again. We can send up half our rings and reestablish the shuttle, but if they blast those, where are we? With a quarter of our Time equipment left, I say forget our losses and go ahead with what we've got. We have all our mcn, our guns, ammunition, and the bulk of our supplies. There are trucks and tanks and gasoline to run them."

"Can tanks swim, or thousands of tons of food fly?" asked the Naval aide caustically. "Where are our ships and the engines for them? They were next to come down. Now they are gone."

"We can build ships," shouted Worrel, "like the Vikings did!"

"Out of what?" snapped the Naval man. "Thc only trees in this country are scrubs. We found that out when we wcnt to build our docks."

There was a dead silence. Then:

"We'll wait for one week for orders from up there," ruled Worrel. "Then we make our own plans."

CHAPTER V

Another Step Backward

IT was just after four in the morning when Kelly shook Winter into wakefulness.

"You take over now, so I can grab a little shut-eye before breakfast," said Kelly softly.

Winter sprang to his fcet and put on his coat and cap. He checked his automatic and saw it held a full clip. That he dropped into its holster and then slid out into the still black night. As he groped his way to the Time-Travcler he became aware of a ruddy flickering reflection from the curved hulls of some nearby shuttles.

Just then he heard distant voices yelling, and the clanging of an iron bar against a metal plate. Fire! As he rounded the Time-Traveler he saw where it was — the main storehouse had flames belching from one end of it. As he stared in sick horror it scemed to burst into blaze all over, and five seconds later was enveloped in raging fire from sill to ridgepole.

His first instinct was to rush toward it, but he checked it. For an instant he was torn between his obvious duty

—to take charge of the fire-fighting party first to arrive—and his self-imposed task of guarding the Time machine. It was a hard choice, especially as he saw the grass catch fire and waves of flames run along the ground toward other buildings and shed. But the alarm had already been given and men by the thousands were pouring out of the barracks and onto the scene.

WINTER heard running footsteps behind him. He turned to see a slender form leap in through the door of the Traveler. Without an instant's hesitation Winter made two tremendous leaps and dived through the door after him. He stumbled and struck the slick deck face down and slid entirely across the cab until he brought up against one of the power units.

Stunned, he heard the door clang shut and experienced the momentary nausea and uncertainty as the machine launched itself through time. By the end of the five seconds Winter was on his feet and facing Snyder. His automatic was out and covering the inventor.

"Well," he said harshly, and his trigger finger itched to squeeze the steel under it, "you didn't get away with it."

Two tremendous explosions outside rocked the Traveler, and debris pelted its hull. Six or eight others followed in close succession, but farther away. Winter knew without being told what was happening. They were back at the old base in 1941, and it was being bombed again.

"General Worrel sent me to report the fire and ask for orders," snarled Snyder.

"Quick work," was Winter's sarcastic answer. "I'll deliver that report and get the orders. Then you and I will go back together."

He bound Snyder to a steel frame, taking no special care to be gentle as he twisted the heavy wire about his ankles. and wrists. He lifted Snyder's keys and snapped the lock on the control lever. Ignoring his captive's angry protests, Winter pulled the port

When Kelly and Winter stepped out of the machine it was into the midst of what seemed to be a duel of giants. (Chap. VI)

open and looked out on an almost unbelievable scene of desolation.

Where once a sheltering forest had stood was only a churned waste of torn earth and blasted rock. What had been a bustling military base was no more than a welter of bomb-craters. Except for shapeless bits of metal and scattered human fragments, there was no sign that the place had ever been visited by man. It was full dawn by now, and as far as Winter could see the harried area stretched for miles. But the sky was clear of planes. That last stick of bombs must have been the parting gift.

SUDDENLY, as if materializing from thin air, a steel-helmeted figure rose from the ground close by. At first he scanned the heavens, then looked at the waste about him. His eye lit on the time machine, and he trudged through the loose earth toward it. Winter saw he wore a Lt. Colonel's uniform and the special badge of the GHQ.

"Thank God, you've come, Major," exclaimed the officer as he approached. "They thought you would, sooner or later, so they've kept me here in this dug-out waiting for you. We're the third on this detail—all the others were wiped out. The Huns come over every four hours, day and night. It has been hell."

He plucked a sealed envelope from an inner pocket.

"For your general. You fellows are to make your way to Berlin as per plan with what you've got. Under no circumstances try to come back, as we cannot maintain this place any longer. Later we will send you the final plan. By the time you are set and ready, the number two machine will be done. Good luck and good-by."

The colonel stuck out his hand, but Winter spoke rapidly for two minutes, sketching out what he knew and suspected about the inventor Snyder, concluding with the story of the fire, now raging "down below."

"Looks bad, I must admit," acknowledged the colonel. "I'll report it, and no doubt Intelligence will have another look."

"Thanks," said Winter laconically, and gripped the hand in farewell.

In a matter of seconds he was back on the plains of prehistoric Scotland, but the total elapsed time since his departure had been close to an hour. In that time much had happened. Winter opened the door and was aghast at the size of the conflagration. The rows of storehouses had already been consumed and were piles of glowing coals.

Now the big storage tanks were afire—fuel oil, lubricating oil, and gasoline. Heavy clouds of dense black smoke obliterated half the sky. There were acres and acres of black stubble where grass had been. Ten thousand sweating and grimy men were busy fighting the blaze, but the huge reserves of the Time Column had been wiped out.

Winter started away from the machine, still leaving his prisoner behind him. He saw Kelly staggering toward him, and he did not recognize the captain at first, for his face was covered with soot and his uniform resembled nothing but old rags.

"Good Lord!" groaned Winter.

"Let me break it to you gently," said Kelly panting. "As you see, everything — or almost everything — is wiped out. The old man is hopping up and down like a pea on a hot griddle. He's yelling for your blood. You weren't in your quarters and you weren't at the fire. Snyder has been filling him full of stuff."

"Snyder!" said Winter contemptuously, jerking a thumb toward the Traveler door. "Go in and have a look. We've got him. He set the fire, and I nabbed him in the act of making a getaway. Come on. Help me untie him and we'll take him straight to the old boy. This thing is going to be settled now."

Kelly looked at him in blank astonishment.

"Don't you understand, Jack Winter?" he pleaded. "Snyder is the fair-haired lad. He's got a pre-arranged alibi for everything."

"Come on," said Winter grimly. "My colors are nailed to the masthead."

Kelly shrugged, and complied. With their sullen prisoner they strode over to where the angry old general was pacing back and forth and cursing a blue-streak at the general incompetence of every man in his division. When he finally paused to look up at the three approaching officers, one marching with hands upraised and a pistol at his back, he was purple.

"Stop that nonsense!" he bellowed. "Winter, hand that gun to my adjutant. Snyder, come here and tell me what all this is about."

The general almost choked with rage. Snyder dropped his arms to his side. When he spoke it was quietly and with restraint, as if in sorrow, not anger.

"As you remember, General, I called on you late last night and told you the peculiar circumstances about my relations with Mrs.—our mutual friend, let us say—in Edinburgh, which I believed explained fully the absurd suspicions of Kelly and Winter." He coughed discreetly and shot an exulting sidelong glance toward Winter, who was boiling.

"Oh, quite," grunted the general. "The confounded asses!"

"After that, I warned you of the extremely vulnerable position we would find ourselves in if by any chance our stores should be lost by theft, storm or fire, and recommended the issuance of orders today for redoubling the sentries?"

"Yes, yes," said the general impatiently. "Of course, I remember. We talked most of the night."

"I also informed you that these two officious young men had set themselves as custodians of my time machine, which, in the event of any such catastrophe might prevent me from going immediately back to our old base and reporting the matter."

"You did," assented the general, glaring at Winter and Kelly. "And I told you to ride over them roughshod and go. It was then the fire broke out."

"Exactly," said Snyder with perfect suavity. "I went, but Winter followed and held me up at the point of a gun, making me a prisoner. Now he has the effrontery to charge me with starting this fire."

"Did you ever hear of those cigar-size, delayed-action incendiary bombs, General?" burst out Winter, unable to restrain himself longer. "He could have sprinkled them about yesterday and still have spent the night—"

"Silence!" roared the general. "I'll have no more of this. Winter, you are relieved from all duties. You are under arrest."

"No, General," protested Snyder, as if the matter were no more than a trifling annoyance, "I am not vindictive. I think perhaps Winter has too big a job for him and that he and Kelly suffer delusions, but I see no point in persecuting him. I thing he has orders for you."

Winter, in the excitement, had forgotten about those. Now he presented them in stony silence. The general tore them open and read them hurriedly.

"Damnation," he growled, "what a pass!" He scowled about at the still raging fires and the tired, baffled men fighting them. To Winter and Kelly he gave the curt order, "Get down there and help. I'll take this mess up later."

THE next council of war was less stormy. They could not go back. Not only did their orders flatly forbid it, but if the Germans kept up their bombing it meant suicide. They could not stay where they were, for there were no trees for timber. There was no local population to press into service.

To scatter over Britain—and that is what they would have to do to survive—meant they would soon degenerate into a race of savages. They might exist as isolated and widely separated small groups of hunters, but in the end they would surely die. Morcover, most of them were itching to get on to Berlin.

Someone remembered the Winter-Kelly report of a previous race. Those two officers, being out of grace, had been excluded from the conference. Now they were sent for. Win-

ter did the speaking, confident and unregenerate despite the rough official handling he had had.

"Yes. We were told that in former ages this land was inhabited by giants and gods and that there were castles and towns. That means people, flocks, perhaps farms. They had ships. I have looked over the salvage from the fire and I find that our stock of flour is little damaged and that we have several hundred tons of ham and bacon left. Some of it is charred, but most of it is edible.

"Hundreds of drums of gasoline were recovered from the tanks of trucks, tanks and tractors. We can abandon most of those and use the gasoline to propel the few trucks we need to carry our guns and ammunition. In that other age we may find horses or oxen to haul the trucks when the fuel gives out. Let's quite wasting time here and jump back another five thousand years into the past."

A babble of voices arose. Some approved, others not. The daring proposition was argued pro and con. In the end the pros had it. They would go back. A deeper detour into the past seemed to be the only feasible course open. They would split their supply of repulsion rings and set up a new shuttle, this time to the year 8,000 B.C.

Worrel objected it would be a shot in the dark. Someone should go ahead and scout. That brought the thing back fairly into Winter's and Kelly's laps. They had interviewed the solitary shepherd of this age; hence, they were the only men competent to deal with the antique languages. They were chosen to lead the punitive expedition deeper into the past.

CHAPTER VI

The Giants

EIGHT thousand, B.C.! When Kelly and Winter stepped out of the machine it was into the midst of what seemed to be a duel of giants. Two tremendous, red-bearded men stood facing one another on a spot about a hundred feet from the Time-traveler, each raining blows on his adversary with a long double-handed sword.

Their only garments were kilts of pelts and rough sandals. Despite their eight feet of height and immense bulk, they danced about like fencers, parrying the blows that were falling upon them with a swiftness and dexterity that was amazing. A group of their kind stood beyond them, looking on.

There was a shout of amazement and the battle stopped abruptly. Both men turned to stare at the strange globe that had materialized out of thin air. Both bellowed like bulls and fearlessly charged forward, waving their ruddy bronze weapons in circles above their heads.

Kelly tried in vain to indicate their mission was peaceful, but the giants continued their charge. The lust for murder was in their red eyes. Major Winter did not hesitate a moment. His face stern and cold, he whipped out his pistol and fired two shots point-blank. The human behemoths pitched headlong forward, their broadswords flying from their hands and clanging against the hull of the Time-traveler.

Winter stepped over the bodies and, still holding the pistol ready, regarded the awe-struck group of giants. They had started to follow the charge, but had stopped and were gazing open-mouthed at the sight before them. Their two greatest champions had been slain by this pale wraith of a pygmy who had appeared from nowhere with no more formidable weapon than a black stone held in his hand! It was magic!

"Now talk to them," ordered Winter grimly. "They will listen. But don't try to sell them the idea of time travel. You'd better just say we are wizards from beyond the western sea who have come to call on their king. Find out where he hangs out. While you are palavering, I'll have Miller and the boys put our little scout plane together."

Kelly picked out the most important looking of the surviving giants, a big brute a head and a half taller than

himself, and began talking. He found to his relief that he had less difficulty reaching a common tongue than he expected.

Languages change vastly in the course of a few thousand years, but this primitive one seemed nearly static. It resembled closely the jargon of mixed Gaelic, old German and early Norse that he had used on the shepherd met in 3000 B.C. By the time the plane was assembled he had learned a good deal.

"I think these fellows are forerunners of the Vikings," he said to Winter, as the giants crowded around to gape at the plane. "You remember the shepherd said that his forefathers immigrated to the northland after that great plague a century or so before his time. And from the names they have, I take it they also represent the origins of the later Nurse mythology.

"This guy calls himself Thrym. The king's name is Skrymer, and he lives in a castle called Yottenholm. That must be at Stirling, from his description of it. Legend eventually made them into fearsome giants, though you can see for yourself they are ordinary men—just big."

"Yeah," grunted Winter. "Well, let's get going. Do you think you can coax your friend Thrym into the plane? It may save more fireworks when we get to Yottenholm. You and I can straddle the fuselage and hang on to struts."

Thrym was delighted. He had admired the "chariot" in the early stages of its assembly and had offered to send for a team of oxen to draw it. When he saw how light and easily managed it was, he told a gang of his retainers to do the pulling instead. But the addition of the wings mystified him. He complained they would catch on bushes and trees.

THEY wedged him into the seat beside the pilot and strapped him in. He started violently at the first roar of the engine, and his minions scattered like frightened deer. The sudden jerk of the swift take-off run and the almost immediate soaring into the sky reduced him to speechlessness. He stared in glassy-eyed silence as they circled Stirling Rock and watched with horror as the ground rose up to meet them.

"Now I know you are truly wizards," he gasped when the little machine bumped to a stop on the plain in the shadow of the rock. He tore away his fastenings and got out, visibly shaken.

"I will go ahead and prepare the way," he added, after a moment. "It is a long, hard climb. Skrymer will send down litters and bearers . . . unless it is your wish to ascend by some strange magic of your own."

Winter glanced up at the sheer cliff. The place was an inland Gibralter, straight up on three sides, approachable only by a steep hogback ramp on the fourth. Kelly gave vent to a low whistle, and Miller groaned.

"We will await Skrymer's hospitality," Winter told the giant gravely.

Skrymer's hospitality proved hard to take. His castle consisted of a single immense room. Its walls were of stacked field-stones and boulders chinked with mud. The roof was built of massive timbers piled across whole tree trunks used for beams. There was no opening anywhere except for the great door.

The gloomy interior was filled with the smoke of cooking, mingled with the stench of carrion, and flavored slightly by the aroma of dogs, horses, cattle, and unwashed human bodies. It was lit by burning wicks laid in seashells filled with melted fats. The floor was ankle-deep in rubbish—bones, ashes and refuse dominating. In one corner was a middenheap.

The banquet their host gave them was particularly revolting. The food was prepared before their eyes, beginning with the first step of driving eight oxen in and slitting their throats with bronze knives. They were then quartered and roasted on spits in pits alongside one wall.

The table was an elevated trough along which the diners stood, snatching at the meat with their hands or cutting off hunks of it with the bone daggers they wore stuck in their waists. They washed down the food

with a frothy drink that looked and smelled like sour milk, but tasted like low-grade Ozark moonshine. There was neither bread nor vegetable other than a bitter root that had some resemblance to a potato.

When the shepherd of 3,000 B.C. had described his predecessors as fierce and turbulent, he had been accurate. These men were all noisy braggarts, and fights broke out frequently. They fought in every conceivable way—with swinging ham-life fists, by grappling and clawing with bone-breaking wrestling holds, with their knives of stone or bone—even with their bronze broadswords.

Three times during the night the servitors had to bring rawhide ropes and drag corpses from the hall. Yet the other feeders at the trough scarcely seemed to notice. The boasting conversation went right on.

Winter and Kelly stood beside Skrymer and talked to him. They watched in wonder as he stuffed huge handfuls of dripping, sizzling meat into his rapacious mouth. His capacity as a drinker was incredible. He would toss off the vile mead a quart at a time and never turn a hair. Two sips of it made Winter's head swim and he resolved to risk no more. Skrymer talked freely and boastfully.

OH, yes, he knew the great land across the water to the East. There was much loot to be had there. He raided it every few years. That was where they obtained the rare bronze for their swords. They also got a mysterious substance that had certain limited uses—cloth, Winter discovered. It made better sails for the ships than skins.

Ships? Yes, he had ships. Many of them. As many as there were hands and toes on the three of them. His gillies were building more. The perils of the sea were great. On every foray they lost many of their boats. That was because of the serpents and great monsters that dwelt in the depths below.

Would he consider an alliance with the wizards and build additional ships for them? He would. He guffawed and said they looked like very puny men, but he had been told they could fly like birds. Skrymer had told moreover how one of them had slain his two best warriors merely by blowing his breath on them. A gift of magic like that ought to be helpful in getting past the sea monsters.

As for the Teutons over there—bah! He needed no help. Their men were small, weak and effeminate. They died like rats before his swordsmen. Now, the women, that was another thing.

Winter wanted to know everything. What about the women? He had not seen one yet, except for a glimpse of a hideous giantess who showed herself for a moment from behind a curtain that shut off one corner of the hall.

"Ah," cried the colossus, licking his lips and reaching for another horn of mead. He rolled his eyes knowingly.

"Ah! Not big, you know, but nice. Too bad they are so weak and fragile. They rarely live a year here. That is why we have to go over every two or three years. Every one we caught in our last haul has died. It is time we had some more."

Winter did not flinch, but there was something frightfully callous and brutal in the giant's manner that made his blood feel like ice water. The boastful king of the giants picked up a stone hatchet that lay among the dogs at his feet. With one mighty crack he split the skull of the ox he was feeding upon. Then, scooping out the brains with a dirty, hairy paw, he plopped them into his mouth and bellowed on.

There was one special Teuton wench he had set his eye on, the present empress. Her name was Brunhilda, daughter to the Emperor Wotan, whom Skrymer had slain on the last excursion. She had been ripe for the taking then, but somehow she had slipped out of his fingers. He had contented himself with sacking her capital, Valhal, and decapitating the only worth-while general she had—a fellow named Tjor. But this year—ah!

Winter got away from the trough. Skrymer was showing signs of sleep-

iness. Abruptly he dropped in his tracks and sprawled where he lay, setting up a vigorous snoring. Elsewhere the riotous feasters had slumped down generally to sleep, their beds being wherever they happen to fall. The filthy floor was too uninviting to Winter. He jerked his head, and Kelly followed him out the door.

THEY threaded their way through a group of slumbering gillies, supposedly sentries, who lay about in all postures while their bone tipped spears stood idly against the rough stone outer wall. Winter heaved in a deep breath of the clean night air, then hunted for a soft spot on the rock.

"It looks as if we will have to suspend negotiations until tomorrow," he said wearily, and coiled himself down for the night.

"Those Teutonic names Skrymer mentioned," speculated Kelly. "Wotan—Tjor—Valhal. They have a familiar ring. Do you think it's possible that these early Teutons can have formed the basis of the Nibelung legends which seem to have sprung up after this Terrible Sickness and been handed down as German mythology?"

"Why not?" replied Winter drowsily. "After what we've been through up to now, I believe anything's possible."

In a few minutes he was snoring gently.

He did not sleep well, though. His dreams were troubled by visions of the unhappy Teutons. He knew nothing about the prehistoric Germans yet, but somehow it went against his grain to sell an unknown race down the river, and that was what he would be doing in forming an alliance with the giant king Skrymer. So he tossed throughout the night and woke up red-eyed and sore in every bone and muscle.

He hardly touched breakfast, which was a repetition of the larger meal of the night before, except that sheep were substituted for cattle. Apparently the early Scots or Norse, were a strictly carnivorous people. He recalled now that he had seen no farms, nothing but herds, on his short flight from Callandar.

Winter tried to push his business to a conclusion as rapidly as possible, but Skrymer was a hard man to push. A sage had to be called and runes consulted. The bearded old medicine man finally was produced, and after a good deal of mumbo-jumbo, handed Winter a carved stick which he said was symbolic of the pact.

The self-styled wizards made their departure as rapidly as possible. Back at the time-machine, they established a small camp and left the plane and all the other personnel in charge of Lieutenant Miller. Then Winter and Kelly disappeared into the future.

Winter's report to the stuffy old general was terse and delivered coldly. Only by thinking of Frieda and modern Germany was he able to go through with it.

"We have an ally—a race of tough big men whose occupation is murder and pillage and who amuse themselves by getting drunk and fighting each other. They have cattle, draft animals, and ships of a sort. They know their way to Germany. They say come on."

He saluted and stalked out.

CHAPTER VII

8,000 B.C.

REMOVAL of the base was carried out in orderly fashion, but with the utmost speed. Winter was restored to his post of transport director as there was no one else on the staff half as competent. Winter accepted the angry reprimand that went with his reappointment in silence, knowing there was nothing to be gained by struggling further with the slender evidence he had while the oily Snyder was still high in the hard-headed general's favor.

He was not forgetting for a moment that the primary object of the expedition was to get into the heart of Germany and that as speedily as possible. There appeared little more damage that Snyder could now do. His

exposure and punishment must be left to later.

Half the rings and a generator on an ex-searchlight truck were sent down first to Skrymer's kingdom. Next the general and his staff, including Snyder, took off, with bedding and field kitchens. Worrel was anxious to meet the prehistoric Scottish king who was to be his ally.

Winter sent down half a dozen trucks, a few motorcycles and a pair of tractors. All the other motorized equipment he left to rust where it stood. Without fuel it was as useless as so many dead horses. The last shuttle to go carried in it all the remainder of the rings except the one it stood on. As soon as it disappeared, Winter had that final ring disassembled and loaded with the power unit into his Class-A machine.

He looked over the control board of the locomotive traveler ruefully. Its yearage meter stood at 35,000; its capacity meter at 15,000. His move to overtake the Time Column would require five thousand more, leaving a scant ten to go. And ten thousand years was the exact interval between their attacking point and modern Germany. The machine had the capacity for that one trip and no more. There could be no more reconnaissance trips either forward or backward.

Just before leaving he took one last look around. He found nothing worth the sacrifice of carrying it. But he did have one happy afterthought. Perhaps in time the GHQ "up there" might see its way clear to follow up with a relief expedition. He should leave word where they had gone.

He got a pot of paint and smeared the sides of a number of the standing vehicles with the sign: *Gone on to the year 8,000 B.C. Hope to make the rest of our way from there.* Then he got into the time-traveler, slammed its door shut, and put it into action.

By the time he arrived at the new base, everything was a hive of activity. Winter was surprised to see so little stuff on the ground. There were hordes of the peasant type giants, or gillies, about, and many teams of oxen. He saw nine of the giants form themselves into a three-deep column of threes and hitch themselves to one of the standing trucks. They started off at a fast walk, dragging it down to the sea. Ironically enough, it was loaded to capacity with drums of the precious gasoline.

They snaked out his donkey boiler and placed it on a drag, to which eight oxen were hitched. Everything was going down to the sea. Other giants would shoulder a segment of a shuttle ring and start off with it at a lope. Their strength was stupendous. Apparently the army had already marched away, as there was scarcely more than a battalion left to direct the final mopping up and transfer of the base.

WINTER supervised the mounting of the precious time-traveler on heavy skids and started it on its first three-dimensional journey. Then, remembering the painted signs he had left behind, he repeated the process here, stating this time the expedition had left for Germany, via the Firth of Forth and the North Sea. This he painted on a board and nailed to a post set up at the very spot his machine had materialized, satisfied that any subsequent expedition would follow his exact trail this far.

He mounted a motorcycle which he had reserved for the purpose and started off after the column of toiling gillies. He marveled at the adaptability of man. These primitive people were already adjusted to the presence of motor vehicles that still killed human beings in the magical Twentieth Century.

He pulled up abreast a forest of high pine trees where hundreds of the gillie giants were at labor. They were pecking at the trunks of the hundred-foot trees with their ridiculous stone axes. Among them were a dozen or more of his carpenters, armed with hand saws, who were trimming the trees whenever one fell, but the work was tedious in the extreme.

Winter regretted now that he had not foreseen this contingency, that he had brought along no heavy wood-

working tools. But the steel ships that were to have been sent them required machinists rather than carpenters to assemble. Many teams of oxen stood about, trailing chains, waiting to drag the felled trees down to the ways.

Winter consoled himself that he had at least thought of bringing the chains. They were the tow chains of his trucks, links together. His idea had been that they would make excellent anchor cables for the ships they were to build.

He watched for a moment, then rode on.

At Forthmouth, the name of the embarkation point, he found many ships under construction on ways. They were open galleys of approximately a hundred feet in length, and he estimated that each could carry around fifty men when fully equipped for sea. But necessarily the work was slow, for the only dressing of the timber possible was with the stone and bronze axes used by the oversized natives. The roughness of the finished product made extensive and risky caulking necessary.

"Hey, listen!" shouted Winter, leaping off his motorcycle. "This will never do. At this rate you people will take all this year and next just to build the fleet. There are thousands of us. Here—grab a couple of those big trucks and strip the sidewalls and the tail-gates off. Bring up one of those acetylene cutting torches, and some machinists with hack-saws and files."

He stood by, waiting impatiently until the detailed soldiers came up. He beckoned to the boss carpenter to come to him.

"We're going to make some saws," he said. "Those truck bodies are thin, but they're hard—built to resist bomb splinters. Lay out big cross-cut saws from the side-boards, and some circular saws from the tail-gates. Do it in chalk and let the flame cutters rough it out. Then put in teeth by hand. After that, you can go back to the woods and cut down trees like nobody's business.

"In a little while a donkey boiler will be here with a generator and some motors. Rig your buzz-saws with those, and your problem of getting planks will be in the bag. There is no more oil for the boiler, but you can fire it with wood. Shake a leg!"

HE went on, indignant. It seemed to him that no one in the expedition had any notion of the need for speed. Hewing down trees and roughing out ship-planking with stone tools! At that rate they would never get to their destination, until long after the war was over.

He found the general brimming

[*Turn page*]

over with good humor, and scented the peculiar sour odor of the mead. King Skrymer was with him, as was also the silent and insolutable Snyder. Apparently they were in the midst of a pre-victory celebration, planning what they meant to do once they had maneuvered the tricky sands of the ancient Elbe and set foot on Teutonia.

"Nice work, Winter," gurgled the purple-faced general, having not the slightest idea of what Winter had just done. "Have a good dinner—they know how to roast a beef here—and a good night's rest. Then report to me in the morning. I have an important mission for you."

"Excuse me, General," said Snyder, smoothly, "but I've just thought of something I should do. It may expedite our plans for the major."

Winter glanced at him sharply, wondering what the crack meant, but Snyder had already finished his clicking of heels and his absurd courtly bow, and was gliding from the room.

"Yes, General?" prompted Winter.

"We'll discuss it in the morning," said the old man, with a genial wave of the hand. "I can give you an idea though. We are making out splendidly here with the help of our good friend King Skrymer. In another month or so we can start. In the meantime it will be helpful if you and Miller take a hop across the North Sea and scout the coast where we are to land. You might even make a landing and give us an estimate of the amount of resistance we can expect. Skrymer tells me the people there speak much the same language as here, and you can make yourself understood in that."

"Yes, sir," said Major Winter, but it was a reluctant reply.

He was liking the expedition less and less. The leering, brutal attitude of the giant king went against his grain, though it was obvious that he was cooperating to the best of his ability. It hurt Winter to see a once famous general bloated and steeped in the vile Skrymerean mead. But above all it irked him that Snyder remained so high in the councils. And what was it that Snyder had to do that was going to expedite this proposed flight? Snyder's help in anything was the last thing Winter wanted.

"WHAT mileage can this flitter-bug do and get back?" Winter asked Miller the next morning. "I understand we are being sent to Germany."

"About four hundred miles," answered the aviator. "If there are only you and I, and we carry along a few extra tins of gas, I guess we could make it nearly to Berlin and back. Why?"

"We're on our way," said Winter, biting off his words. "But get your gas, and check your machine like you never checked a machine before. I smell something cooking. Just between you and me, I think were being sent—not taken—for a ride."

"Yeah?"

"Yeah. So watch your step."

Winter did not take off until he had had a long talk with Kelly. At the end of it they shook hands, and Winter climbed into the plane.

"Be seeing you," he said as a last word of farewell, and nodded to Miller to give her the gun.

The plane took off and soared out over the gray North Sea. The ocean was being whipped by a nasty easterly gale and its waves ran like the stripes of a brindled cat, alternately irregular rows of whitecaps and the dark troughs between. They ducked their heads against the fierce blast of the head wind they had to buck.

Two hours later they picked up the low Dutch coast, vague on the horizon to the right of them. A little later the green lowlands of Germany came up in front, and presently began to slide beneath. It was just then that the motor sputtered, missed a long series of explosions, caught again, then died.

"Well," said Winter bitterly, "this is it. Land where you can."

He set his jaw and looked out over the edge of the cockpit at the green terrain beneath. It was a well watered country, full of clearings and speckled with what appeared to be villages. Down there somewhere the

next, and perhaps final, episode of this strange adventure into the far past awaited him.

He had done his best and failed. Chicanery and stupidity had done them in. It was a combination hard to beat by mere industry and good faith. The slimy, scheming Snyder had won. There was no one now but Kelly to stand up against him, and no doubt the saboteur would find a way shortly to clip the intelligence captain's wings.

Then Winter's mood changed. He shed his dejection as swiftly as he had fallen into it.

"I'll be blasted if Snyder wins!" he thought to himself. He could not have said it out loud, for his teeth were ground together so tightly that it hurt, though he was unaware of it at the moment.

"There's a good place—there!" he yelled, pointing to a field in which several people seemed to be plowing.

"I see it," acknowledged Miller, already dipping the nose of the plane.

CHAPTER VIII

Teutonia

IT was a very dazed pair of American-born officers of the B.T.C. who went to bed that night in primeval Germany. Their mattress was a cloth-covered one, stuffed with clean goose feathers. And the room was spotless, even if it was in a log house and had an earthen floor.

Their reception had been kindly, and their supper had been a welcome relief from the strictly meat diet they had been living on for weeks, great variety of vegetables, milk, dumplings, good gravy, and duck. The meal had been accompanied by an excellent beer and a mild white wine. It could not be denied, despite certain primitive methods, that Teutonia was a civilized country.

"What gets me," said Miller, yawning contentedly and peeling off his shirt, "is that these ancients are so typically German."

"Yes?" challenged Winter sourly. At the moment he was thinking of Germans in terms of the Himmlers, the Hesses, the Von Ribbentrops and the Von Papens and the other scum that inevitably rises to the top of a stagnant pool. For an instant he failed to understand Miller's remark.

Then he recalled the other Germans he had known personally. There were the fine old plump, jovial and good-natured men and women he had met in the beer gardens of St. Louis and the rathskellers of New York. Those were people who assembled at night to bowl or to play chamber music or to sing *lieder* in choral groups. They were a hard-working, kind and helpful people.

But then all that had been before the days when the devilish theories of Nietzsche had come to their full power in the not too adroit but persistent lying of the unspeakable Goebbels. That was before Hitler and Hess had contaminated a nation.

"Yes," admitted Winter, after a long pause. "So they are."

He added nothing to that, but tumbled into bed, his mind a whirlwind of doubt and misgiving.

That afternoon they had landed in a field that was being plowed. It was true that the plow was no more than a crooked piece of wood, drawn by a team of old women. Nevertheless, this crude tillage of the soil was proof of a tremendous step in progress above the barbarous herd culture of the giants across the channel.

They had seen looms and spinning wheels in the other rooms of the house they were in. In fact, the existence of partitions within the house, allowing a degree of privacy and separating the domestic functions into several compartments, was more evidence of a civilized, cultured nation.

The truly marvelous thing about it that it was all done without metals. The beams of the house and the parts of the looms had been mortised or dowelled together, or bound with rawhide thongs. Winter worried about all that. Without knowing anything about these people who were so hard-working, mild and hospitable, he had

arranged for their invasion.

But he slept some in spite of his restless thoughts. In the morning he and Miller made another and closer inspection of their plane. It took them a long time to find the cause of their trouble—the clogging of the gas feed line. All their gasoline, whether in tank or cans, was filled with small gelatinish globules. They filtered the tapioca-like substance out, but as fast as they did new formations of it occurred.

"Must be caused by a new chemical, perhaps a powder dropped in," observed Miller. "I never knew gasoline to jell like this."

"Nor I," growled Winter, frowning darkly. "It is more of Snyder's work. He has been sabotaging this expedition from the start. So far he has crippled us, but not topped us. Now he has the old general under his thumb and is in cahoots with Skrymer. He has got rid of us. Then he'll do Kelly in. What next, I wonder?"

Miller shrugged.

"Couldn't say," he grunted. "What do *we* do next?"

"Hah!" exclaimed Winter in disgust. "We can't get back. So we are going on to the capital of this country and interview its rulers. We will warn them of what is coming. We will try to make an arrangement by which our Time Column will be permitted and aided to pass through the country to the site of the future Berlin, where it will disappear without molesting them further. Then we will come back to meet our forces when they land and try to talk them into living up to our pact."

"It is a big order," commented Miller.

"It is the only course open to us," said Winter. "And it's the least we can do."

THE trip to Valhal was intensely interesting. The rate of travel was slow, because all the vehicles were animal drawn, and the local inhabitants of the villages through which they passed were insistent upon entertaining them. Winter's eyes were opened still further.

There were many striking things about this early Teutonic culture. The third village they passed, for example, was surrounded for miles by nothing but flax fields, and every house in the village contained six or more looms at which the whole family worked. They produced far more cloth than they could ever hope to use. That indicated commerce, for something must be done with the surplus.

"It grows well here," explained the headman, "and weaving suits us. But we do not lack for other things."

He produced an earthen jar filled with olives which he said had been brought by caravan from south of the great white mountains. It was proof that intra continental trade existed, and that the continentals had an advanced notion of the value of specialization and interchange of products. It was the age of barter.

There was no glassware or iron, but the carts used had spoked wheels, not solid ones. There were reasonably good roads, well graded and drained, and supplied with culverts and small bridges. The Chinese, a cultured people for three thousand years, never developed their communal sense to the degree that local people would work on roads that simply crossed their districts and appeared to be of no immediate use to them.

"The more I see of this country the better I like it," said Miller admiringly after hearing some astonishingly good singing, accompanied by some instrumentalists, one night. The instruments were crude and the orchestration simple, but both were miles in advance of the savage tom-tom.

"Same here," said Winter. He had been delighted by some lacework and embroidery he had been shown. "They have commerce, local law and order, and art. All they lack is science."

"And soldiers," added Miller thoughtfully. "I haven't seen a man with a sword or spear since we landed. The only knives have been in the kitchens."

"I've been thinking of that," Winter agreed, "but they seem well organized otherwise. It is hard to believe they have no army of some kind.

Perhaps it is organized as a militia and only called out when there is a foreign invasion."

"Skrymêr said the Teuton men were pushovers," reminded Miller pointedly.

"So he did," said Winter, and his gloomy mood seized him again. The deeper he penetrated this peaceful, thriving country the more the boast, ing, sneering words of the brutal giants burned in his memory. They had said that the only risk in the expedition was the perils of the sea, that the men scattered like rabbits or died under their blades like sheep, that the women and the coarser grades of cloth were the only worthwhile booty. All else they burned and wasted.

It struck him as a strange and ironic twist in history that he should have delivered a peace-loving, frugal, merry people over to the sack of brutal tribes that produced nothing themselves, but lived by the robbery and slaughter of others. To deliver one civilization from the atavistic Nazis, he was sacrificing another to the coarse and ruthless pre-Norsemen.

"What does it matter?" Miller tried to comfort him one day, after Winter had unburdened himself of some of his sense of guilt. "Didn't we learn the whole works was to be wiped out by a continent-wide plague?"

"Yes," said Winter dismally. "But that will not occur for three or four thousand years from now—as long a period as all recorded history. That night when I agreed to help Skrymer if he would help us I laid the foundation for the first Dark Ages. We must undo that if we can."

"Maybe this Empress Brunhilda will have something up her sleeve," suggested Miller hopefully.

"Maybe." Winter urged the driver to whip up his horses. Valhal was said to be but one day's journey ahead.

WINTER and Miller found the imperial palace anything but imposing. It was built of logs, too, and differed from an ordinary citizen's house only in that it was larger. When they got inside they knew at once why that was. In the biggest of its rooms a number of delegations of foreigners were waiting. A Teuton—large for his race, being all of six feet high and adorned with a flowing red beard—was looking over the wares they displayed.

The first to approach him was a group of wizened, slant-eyed, yellow men, bearing bolts of brocaded silks, lumps of carved ivory and jade, and bags of tea. The Teuton examined the offerings appraisingly. For his part he showed them linens, wheat, and wood carvings. There was a long dickering. Then a bargain was struck.

"Gosh," exclaimed Winter in Miller's ear. "I thought he was buying baubles for the empress. Do you know what he just did? He arranged for two years' import of the Chinese things for the entire empire, and provided exchange for it in the products the Chinese do not produce themselves. Now he's dictating letters to the provincial government telling them how much extra wheat and flax they must plant next year in order to fulfill this contract for tea and silk. He turned down their bribe of jade. Can you beat that for planned economy!"

The next up was a group of turbanned, swarthy men, apparently from the shores of the Indian Ocean, but whether Hindoos, Persians or something else Winter could not know. They, like the first, talked through interpreters. They had samples of spices with them, diamonds, slabs of ebony inlaid with ivory and mother-of-pearl, curious dried fruits, among them dates.

They also wanted linens, and amber as well. The deal was made. Then a black-headed Iberian stepped up with a slab of cork in his hands. He had olives, too, and a string of dried red-peppers.

The two misplaced Americans had to wait until all the commercial missions had been disposed of before the man who seemed to be the national purchasing agent took notice of them.

"Oh," he said, frowning thoughtfully when they were presented. "What do you bring?"

"Destruction," was Winter's enig-

matic answer. "I must see your ruler at once."

For the first time since they had been watching him, the Teuton trader seemed taken aback. The single ominous word "destruction" was so belied by the calm and sad delivery of it that it was plain that he could not tell whether it was a threat, warning, or a feeble attempt at humor.

"The Empress Brunhilda is unavoidably late," he apologized. "A number of our people have been dying lately in the eastern provinces from the black vomit. One of our sages thinks rats have something to do with it. She is conferring with him now. She will see you shortly."

"Ah," observed Winter. "They even have the beginnings of science. That must be the Bubonic plague, and there is at least one man among them smart enough to guess at its cause."

At that moment the Empress Brunhilda pushed aside the curtains that covered the door to the adjoining room. Her entry was deliberately paced and dignified. She advanced four steps and stopped, looking inquiringly at these strange visitors who had been reported as dropping from the skies. She was tall, stately, and beautiful. Her golden hair hung down over her breasts in two wide braids.

"Frieda!" cried Winter, in a paroxysm of long-thwarted desire.

He started forward with outflung arms.

CHAPTER IX

Reversal

FOR a moment the world stood still. Winter forgot the Time Column, forgot this was 8000 B.C., forgot the impending invasion by Worrel and Skrymer. Only one thing stood out in his memory—the words he had spoken to Captain Kelly that first night at Yottenholm. "After what we've been through up to now, I believe anything's possible."

Once again Major Jack Winter stood confronting his slain love. The Empress Brunhilda more than resembled Frieda Blenheim; she was her living double, even to the tiny brown mole just under the left eye—that tiny beauty blemish he had many times kissed so tenderly. This woman's majestic bearing, the frank and outspoken gaze, her very expression, every gesture was the same.

Brunhilda was staring now in wide-eyed amazement at the lean-faced American who continued to advance upon her. There was no recognition in her gaze, but there was a startled expression of a dawning kinship, of a bond between them. It was such an attraction as that of a magnet for a fine piece of steel—even the sort of fire as that struck by flint and steel. Two strong personalities cast in complementary molds in Nature's inexplicable furnace were being drawn to each other. A miracle was unfolding before Lieutenant Miller's bulging eyes.

Then:

"Please," said Brunhilda quietly, holding up a hand in a graceful gesture so dear and familiar to Winter that he ached to snatch that hand and impress a kiss upon it. "You have sought an audience with me. Why? We have never trafficked with peoples from the skies."

This halted Winter. It brought him to a realization of his surroundings. Abashed, sick to his very soul, shaken to the very core of his being, he came to a stop and searched for fitting words.

"I do not come from the skies," he said hesitantly. "That is but a mode of travel among my people. I belong to a race that is living ten thousand years after yours. I have been sent back into the past on a special mission. I—I—"

Words failed him for a moment.

"You talk in riddles," she said calmly. "But go on. I have learned that there are many things in existence stranger than we imagine. Why have you demanded an audience with me?"

She was drawn up to full height and her breast was heaving in excitement. Her eyes were commanding.

"It . . . it is that I have come to

warn you," he floundered. "Your nation is in great danger, and it is my fault. I did not know. There are many fierce warriors following me. It is necessary that we cross part of your country."

"There is no reason why you should not cross it," she said, with great dignity. "It is a privilege I readily grant. We have many travelers."

He hardly heard her words, still seeing and hearing Frieda in every tiny gesture and mannerism. Her rich, vibrant voice was the same; the illusion of her reincarnation was flawless. It was incredible that, spaced a hundred centuries apart, Nature should have duplicated her handiwork so exactly. Winter knew his face must be beet-colored with blushes, for he felt the surge of pounding pulses in his neck and temples.

"But," he blurted out excitedly, "can't you see? I thought you were savages. We were stranded in Scotland—the Western Islands as you call them—and had to get on here. Only a few of us can fly, and the machine we came in is wrecked. We had to have ships. That is why we entered into an agreement with King Skrymer."

"That animal!" she said, and her lip curled in scorn.

HE paused, flustered. But he had to tell it.

"He agreed to help us, to furnish ships and man-power. He said he was familiar with this country and it was inhabited by a degenerated weakling race whose only merit was its women. His reward for his efforts is to be *you*—God forbid! Forgive me, if you can. I did not know."

Winter stopped, red-faced. It was a hard confession to make, but he had made it. For a moment she stood in all her majesty, glaring at him. Then she seemed to melt. When she spoke next it was softly.

"You are a strange man," she almost whispered. "You come in a seemingly friendly way to utter vague warnings and vile threats. How am I to know what to believe? Skrymer and his savages appear periodically on our coasts and ravage a few small towns. He is a menace, as the forest wolves are, but we have never seen fit to drop our peaceful pursuits and organize against him.

"It is wasteful to be forever preparing for war, for which we have no desire. It is better to let him come every third or fourth year, burn a town or two, and carry away a half a hundred peasant women, than to turn our nation into a race of brutes!"

"Hah!" snorted Winter in indignation. "Appeasement, huh? Well, I'll tell you this, my lady, it won't work. It was tried out thoroughly in my time. You cannot appease a blackmailer. They always come back for more. This Skrymer—"

"Don't mention his name again!" she cried imperiously. "I hate him. He killed my father in the most barbarous fashion before my eyes. I shall send messengers at once to the coastal towns to warn them. I will have many bolts of the coarse cloth they seem to prize sent down. They will hold lotteries in the towns to provide the list of hostages for them."

"Hostages!" cried Winter, horrified, "you mean slaves, victims?"

"It is better than war," she answered. "They come but seldom and they do not stay long. It is better so. Should we attempt to meet them on their own bestial level it would mean that our farmers and our weavers and all the men of the west would have to quit useful work and waste their time in senseless athletic exercises and the making of cruel weapons."

Winter stared at her aghast. Here again, in this dim distant age of the past he was hearing the all too familiar self-deception of the pacifist.

"Furthermore, we think it wrong to kill a fellowman, even an evil one, such as Skrymer," she added in a reproachful tone.

He groaned. That, too, had a familiar ring. It was a noble thought, but futile. For he had banqueted with the carnal, brutal, boasting Skrymer. He knew how little the yielding of the mild Teutons would impress him. And there was the complication of the

Time Column itself, twenty thousand men from the Twentieth Century.

"But, my lady," insisted Winter imploringly, "can't I make you understand? This is no ordinary raid, but an invasion. This time they are not coming in a few dozen ships, but in hundreds. They have weapons that kill at a great distance—as far as a man can be seen. They will not be content with your mild peace offerings, but will demand all. The giant Skrymer, I told you, has his heart set on no less prize than your own person."

"Then," she said proudly, drawing herself up to her full height, "he will be disappointed. If he should reach me, it will be to find me dead by my own hand. Perhaps the sight of me will soften even his stony heart and he will know he is unwanted and return no more."

WINTER regarded her pityingly. She was so beautiful, so magnificent — and so mistaken. It made him sick, as did all such noble but impracticable displays. He knew what she did not—that in ten thousand more years the Utopia in which the lamb could lie down beside the lion had not even been approached.

Winter liked the law of fang and claw as little as the next man, but history had taught him that in the main it prevailed and must be reckoned with. The sweetest idealist must have a certain hardness about him, or his ideals will be lost and have no more effect on the shaping of events than the fleeting odor of a violet of the woods.

"You have been warned, Queen Brunhilda," he said slowly. "I can do no more. Tomorrow I shall go back to the shore and try my best to soften the blow, but I fear it will be a heavy one."

It wrung his heart to say that. He longed to take her in his arms and hold her to him. Now that she had spoken, she *was* his martyred Frieda, restored to him after ten millenia. Yet she was the ruler of a continental empire and he was but a self-appointed ambassador without rank, bringing dire threats and warnings. He knew he must stiffle the yearning the sight of her aroused.

Some glimmering of what was passing through his mind must have come to hers, for she seemed to soften. After thanking him formally, she dropped her imperial manner and said in addition:

"We have long dealt with the traders of the Far East, the Middle Sea to the South and the Hot Lands beyond, but never with the sky people or those beyond the Western Ocean. You will remain here tonight and your friend and you must sup with me. I am interested to know what your arts and industries are. But please do not talk about war. I abhor it.

The supper was more evidence, if that were needed, as to the advanced state of this pre-Teutonic culture. Bread was served, and pastry, both baked goods. There were sweets and salads, showing that the pre-Germans knew the virtues of the beet. Savages and barbarians seldom learn the art of cookery beyond the boiling and barbecuing stage.

Brunhilda listened, rapt, to Winter's account, abbreviated as it had to be, of the earth's history from her time to his. She was dumbfounded to hear of ages of progress, interrupted by ages of retrogression. Of the painful and crude beginnings of the Renaissance and the climb upward to a new and more inclusive democracy, of the abolition of superstition and the establishment of science, and of the toppling over of thrones and the absolute rulers such as the Czar of the Russias, the Empress of China, and the cruel old Sultans of Turkey.

She heard of democracy and commerce and industry, of the abolition of slavery, and of the solemn pacts to renunciate war. He told her, too, of the rise of gangsterism in Europe and something of the methods of Mussolini and his much more competent disciple Hitler, and of the methods they had chosen to use.

"So you see," he said, in concluding, "what we came back here for. The world is at the crossroads. It is a

new Dark Ages that confronts us if they are permitted to conquer. It will not be. It cannot be. We must not allow it."

HE paused and looked at her. Their glances locked, and in that long mutual stare he knew that he had driven his point home. He knew, too, that there was something more than the clear logic of his tale that had caught her, for the slight flush that spread down her neck told him more than any number of words might have that she shared without understanding the personal bond that was between them.

"It is odd," she said, quite irrelevantly, "but somehow everything you say is so real. It seems as if I had known you always, though as in a dream."

"Yes," he said, playing with the curious two-tined fork of bone—for the Teutons had invented forks, "I think you have. Longer than you know. Better than you know. Ten thousand years from now there was a girl, so like you she could impersonate you. We were to have been married. That butcher Hitler I told you of had her beheaded. You may understand now why I have gone to these extremes to get at him."

"I think I understand," she said gently, and her eyes were moist.

He rose, and she accompanied him to the doorway that led him to the apartment set apart for him.

"I think I understand," she repeated, almost in a whisper, "and I forgive you for what you may have brought upon me and mine."

He answered her squeeze of the hand with another, equally as fervent. Then, before he could restrain himself, he had her in his arms. The sheer ecstasy of the moment made him sob in his aching throat. She raised her face—and he kissed her. He held her to him for a long time while all his sensibilities swirled ecstatically in a golden mist of rapture. That which he had thought lost forever had been returned to him, revivified and more glorious than ever.

But the swift revelation of Paradise could not last forever. The idea burned in on him even in that moment of utter bliss that she and her people were in dire jeopardy, and that partly by his own acts. He knew that he now had a double allegiance—one to his cause, the other to his refound love. He held her at arms' length and told her gently.

"At dawn I must leave. I must lighten the blow that is about to fall upon you. It will be hard, and I may fail. Have faith, dear Fr—Brunhilda, as you always had."

He kissed away her puzzled look and strode from the room.

CHAPTER X

Doublecrossed Again!

THE seven columns of white wood smoke rising on the northwestern horizon told Winter and Miller all they needed to know. The uplands of Bavaria and Valhal lay behind them and low, marshy plains of the Elbe River were but another day's journey ahead. They knew now that they would not arrive on its banks in time to receive their army or to forestall the savage invasion. It was too late, as the smoke of the burning villages showed. The pre-Vikings were already at their work of rapine and destruction.

They hurried on, turning aside from time to time to let white-faced and frightened refugees go by them. After awhile they met no more of those, but came across the ruins of a still-smoldering village. It was a disgusting sight to see the lanes strewn with the torn and smashed fragments of household utensils which had been senselessly and wantonly ruined by the ignorant barbarians. A more angering sight was that of the hacked and mutilated bodies of the Teuton men. The spectacle would have been less horrible, Winter thought, irrational though the thought might seem, had there been more women among the dead. But he knew why there were not. They had been reserved

for another and more terrible fate.

The only signs of what had become of the invaders were trails of beaten down crops in the adjoining fields. Apparently the giants had scattered through those in pursuit of their fleeing victims. A little farther along the road the two Americans came upon four of the big fellows, sitting in a ditch and singing in maudlin voices while each clutched sottishly at a pigskin half full of wine.

Winter felt the savage urge to shoot all four where they sprawled, but suppressed it. That would do no good, only jeopardize his own safety. After all, their presence here was his own doing. It was his reward for dabbling in statecraft without knowing all the facts.

Later they made detours to avoid other of the marauding bands. It was not hard to do, for the giants had already had a fair share of loot as was clearly shown by their condition. They marched staggeringly, arm in arm, bellowing out their foul drinking songs or venting their wolfish war cries.

Twilight was near at hand when Winter and Miller got their first glimpse of familiar khaki. It was the uniform of an officer leading a small file of the Time Column's infantry.

"Kelly!" yelled Winter in delight as he recognized the captain.

"Winter!" was the equally happy cry of the intelligence officer. "Thank God, I found you. Maybe between us we can do something yet. Things have gone from bad to worse, but that is nothing to what they're going to be."

"I know," said Winter hurriedly. "Where is General Worrel? Stupid and bullheaded as he is, I must see him at once."

"You won't see him—ever," answered Kelly solemnly. "He is dead. Our supreme commander now is Hugh Snyder — *General* Snyder, if you please."

"What!"

"Yes. The old general made him second in command the day before he died. The next morning Snyder read out the orders appointing him as successor, and at the same time lit the funeral pyre that had been built overnight for the general's body. It was our first news of it."

"What did the old man die of?" demanded Winter suspiciously.

KELLY shrugged. "The doctor was furious. He meant to hold an autopsy, but never had the chance. He thinks it was from a rare poison. He also thinks the drug had been administered for some time, an accumulative poison that gradually undermined the will and faculties of the general's mind."

"We must break this up," said Winter grimly. "If there is no other way, I'll find the traitor and shoot him."

"If he doesn't shoot you first," were the ominous words of Kelly. "That is why I'm sticking my own neck out. I slipped off on this scouting expedition in hope of running into you and warning you. You are to be courtmartialed and shot for having failed to return with the plane, and for having abandoned it in good condition. That surly Dutchman who is Snyder's number one mechanic was the one who found the plane. He examined it and said it was in perfect flying condition and with ample gasoline for the return flight."

"That was more of Snyder's dirty work," said Winter glumly, dropping upon the turf beside Kelly.

The men of the detachment, including Miller, had scattered and were scouring the woods for firewood. They would shortly have supper, a brief rest, and then get on. The two sat for several hours, exchanging news and comparing notes. The situation was indeed bad.

"You know we worked everybody hard getting out those ships," informed Kelly gloomily, poking at the grass with a bayonet as he talked. "There were hundreds of them in the water when I left, and more on the ways. The men began to grumble at the long hours and the bad food. Then subversive pamphlets began to show up.

"I don't know where they came from, but they were of every type, and

very cleverly gotten up. They warned the workers that no one knew what the postwar conditions would be, but that there was one thing certain. Whoever won, the common man would get it in the neck. They pointed out how swell everything was under the totalitarian system. You know the line.

"Well, a lot of 'em fell for it. They say they won't go back to the Twentieth century, that they're better off where they are, what with their steel tools and all. They figure they can be the dominant people of this age and develop exactly the kind of civilization they want. They plan to establish a new race."

"Without women?"

"Oh, that is all taken care of. They have made deals with the giants for part of their loot. Take the fellow who runs your home-made saw-mill, for example. He's sitting pretty. And the blacksmiths plan to use the abandoned trucks, forging swords and knives from their parts. A good many of the artisans have deserted already and gone south toward the Tyne, looking for coal and iron mines."

"What about the soldiers?"

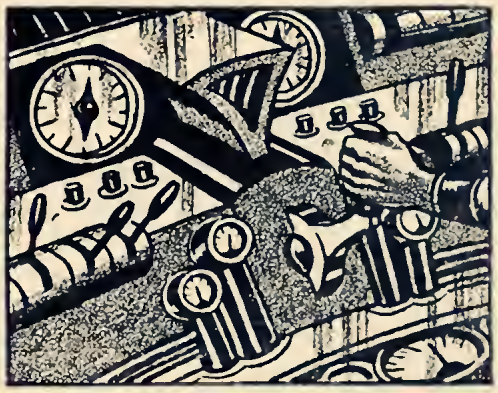
"There was propaganda there, too, but it did not catch on so well. Very few of them have fallen for it, and they may have been planted all along. They are the ones who form Snyder's bodyguard."

"Oh, he has a bodyguard now, has he?"

"Yes. He only sees underlings when he sends for them. That is what makes our problem so tough. And to be sure he has his own way, he first got rid of you and Miller. Now he thinks he has rid himself of me. That is why he sent me with the first flotilla."

WINTER looked at Kelly inquiringly.

"Except for this detachment and a scow carrying the Class-A Time-traveler and its special guard, all the first three hundred ships are loaded with giants. They are supposed to clear the way. Then the ships go back for our people. Snyder figures I'll get killed or lost. I wouldn't wonder Skrymer has orders to that effect."



Winter's stare was full of incredulous horror.

"Do you mean," he asked, speaking slowly and distinctly, "that our infantry—our own fighting men—and the time rings are not to come until last? That we have to lose weeks and weeks more at the hands of that traitorous Snyder?"

"Just that," affirmed Kelly. "Worse. Snyder tells 'em now that the rings are at the end of their capacity, or nearly so, but that it doesn't matter. He has thought of an improvement on his method, and will build some substitutes here while the Time Column is catching up. The rings are not coming at all."

Winter broke the stick of firewood in his hands in sudden fury and hurled

the bits away from him. He strode up and down for several minutes, cursing Snyder and his works without pause. Nor did he spare himself.

"We should have killed him!" he cried. "No matter how stupid the others were, we should have killed the snake. *We* knew, you and I. He is a Nazi agent, there is no longer doubt about it. He destroyed our link with our own time. He burned our stores. He demoralized our general and finally wormed himself into the command. And he is using that power now to wreck what is left of us.

"There is nothing wrong with those rings. But I see his scheme. Having done his worst and made sure no one can follow him for at least a month more, he plans to escape to his own time and country in the Class-A machine, leaving us stranded here in time. But we'll fix that! Where is it?"

"The scow it's on is tied up to a tree on the bank of the Elbe about ten miles from here."

"Come on," shouted Winter. "To the devil with supper! These boys can follow. You and I are going places right now!"

It lacked only two or three hours until the dawn when they came to the bank of the river. The barge, as Kelly had said, was secured by a line to an immense tree, her stern pushed upstream by the inrushing, gurgling flood tide. Still high in the southwest sky a full moon rode, throwing down intermittent spot lights between the tall trees.

All on board the moored ship was quiet, except for a raucous snore as one or another of its crew rolled over in his drunken stupor. The limp and abandoned wineskins lying beside the embers of their campfires on the shore told the story plainly enough.

Winter's hand detained Kelly.

"Wait," he whispered.

HE sought and found a small sapling and cut it down with his pocket-knife.

Then he whittled out a number of slender wooden wedges which he dropped into a side-pocket. After that he led the way to the mooring line.

"Help me haul her up so I can get aboard. You stay in the bow and keep a lookout. I won't need other help. I know that time machine as well as Snyder does."

Winter made his way aft through the spotty moonlight, careful not to step on the sprawling carousers of the night before who littered the deck like corpses on a battlefield. The great silvery sphere stood before him. He opened its door with the key he still had—the only other not kept by Snyder himself. Once inside he closed the door and boldly snapped on the lights.

IT did not take long for him to do what he had set out to do. He drove the slender wedges in to certain places on the control board. When he was finished they were invisible, yet he felt confident they would do what he meant them to do. Then he severed a number of the wire connections leading from the supply reservoirs to the time-motivating elements. Following that up, he took a sledge and battered down the terminals until they were no more than blobs of hammered copper. As a parting gesture he took away the master choke-coil, a spiral coil of flat band metal not unlike the main-spring of a watch. This was an alloy of such scarce metals that it could hardly be replaced even in the Twentieth Century. Without it, the Time-traveler was useless junk.

He stepped back and surveyed the scene. It was as he had planned it. Its open sabotage was obvious, but without the spring he was taking with him, beyond repair. In addition there was his secret work, which he doubted anyone would suspect—even the inventor Snyder. He took off the puttee of his left leg, wound the spiral band of metal about his shin and then put his puttee back on.

The hard metal cut his leg and he knew walking was not going to be fun, but it was essential that he keep the piece with him as he was ever to activate the machine again. That done, he turned off the lights and glided out onto the barge deck.

CHAPTER XI

Confirmation!

WINTER'S work had taken him longer than he thought. By the time he crossed the deck the moon was setting and the first pearl gray of dawn had come. He was about to climb the side to go ashore when he heard the sound of men's voices coming from the river. The sounds were faint, and accompanied by the creaking of rough blocks and crude tackle. They indicated a galley. He nudged Kelly, and they crouched below the rail to look.

Three galleys were sweeping by, a half-mile away, apparently using what breeze there was and the last of the flood tide to get up the river with as little effort as possible. There were a few khaki-clad figures on their decks, and the center galley flaunted the standard of the senior general. That meant that Snyder and his staff of Fifth Columnists had arrived. This was another disappointment. Winter had been hoping against hope that adverse winds might have slowed those traitorous ships and let the vanguard of the loyal Time Column arrive first.

The galleys were making good time and did not pause to speak the scow, but went on upriver. In half an hour they rounded a bend and were lost to view. By that time the scow had begun to swing outstream, and from that Winter knew the end of the flood had come. Slack water was about over, and the ebb beginning to run. That meant that if there were other galleys accompanying the perfidious commander, they would probably tie up or anchor down river and await for the next change of current.

It was an exasperating situation and one that put Winter into a quandary. He wanted fiercely to intercept the first of the loyal galleyloads to arrive and spread his warnings of Snyder among them. He also wanted equally to hurry back to Valhal and tell Brunhilda of the extent of the threatening peril. Skrymer and several thousand of his cruel giants were loose in her country, and her own person was the prize that Skrymer had selected for himself.

Once again Winter was torn between two conflicting loyalties. Since that unforgettable farewell kiss his yearning for the fair Brunhilda had grown until now it was almost unbearable. Yet he was a soldier and he had grim duties to perform in another Germany ten thousand years hence. On the one hand he wanted to get to her, on the other he knew he should go on down river and wait, for his comrades.

The hard decision he had to make was suddenly settled for him in an unexpected way. He was about to hop ashore when he heard yelling and the splashing of oars.

Another galley was coming up the river, rowing furiously with double banks of oars. As it loomed closer through the thin morning mists, Winter saw that was manned by khaki-clad soldiers of the B.T.C. There was not a giant among them. The official mail flag flew at the masthead, signifying that the vessel was bearing despatches. From the obvious effort it was making to overtake the flagship, he deduced that it had left the Scottish shores later and that the despatches were important.

"Those people have late news," he said excitedly to Kelly. Let's get this canoe over the side and find out what it is."

THE canoe was a flimsy sort of kyack made of skins and carried on the deck of the scow for ship to shore communication. It took but a moment to put it into the water. The two officers got into it cautiously and picked up the paddles. By dint of vigorous exertion they managed to intercept the galley in midstream. Winter hailed its commander and the rowing stopped. To avoid being swept downstream the galley dropped its anchor into the muddy waters.

The captain of the galley proved to be a lieutenant of the tank corps, one of the enthusiastic officers whose

loyalty Winter did not question. Without preamble or apology, Winter, assisted where needful by Kelly, poured out the tangled story.

He charged Snyder bluntly with being a saboteur and recited the long series of adverse incidents that had dogged the expedition from its outset. It was too plain to miss that the Time Column had been doublecrossed from the beginning, and that unless some drastic steps were taken to avoid the danger, it was doomed to bog down just where it was—ten thousand long years in the past.

Seeing his torrent of words had made some impression on the young officer, Winter made a flat demand.

"What are those despatches you are carrying? Where from and to whom? Tear them open and let's see what deviltry Snyder is up to now."

"That would be dishonorable," hesitated the lieutenant, still clinging to his traditions despite the damning story he had just heard. "They are official and marked 'Very secret—for the commanding general only.' They come direct from GHQ and are addressed to General Worrel or his successor in command. To break those seals would be treason."

"Poppycock!" snapped Winter. "Did you say from GHQ? From 1941?"

The young officer nodded.

"How?"

"By the number two Class-A machine—the one they were building at Clydebank. A special messenger came just a week ago, saying it was most urgent. We set off at once."

"Give me that message!" Winter's gun was out, and so was Kelly's.

They had been standing close to the lieutenant on the galley's tiny poop and out of earshot of the tired rowers who had taken advantage of the stop to throw themselves down onto the deck to rest. No one saw the act.

"We hate to do this," Winter added, a little less vehemently, "but we have leaned backward too long trying to deal honorably with people who have no honor. The time has come to fight fire with fire."

The lieutenant reached inside his blouse and pulled out the many-sealed envelope. Silently he handed it over.

Winter tore it open and with Kelly read avidly. Without a word he handed the first page to the galley commander, and the next and the next, as rapidly as he finished them.

"See?" he said in grim triumph, watching the other's face change as fury succeeded doubt. "What disposition do you think our precious present general would have made of that document? Snyder, indeed! His true name is Schneider. We might have guessed that, too."

WINTER snatched the papers back and ran through them once more, gloatingly. The pages in his hand trembled as he quivered with excitement. The first document was a death warrant for one Hugo Schneider, alias Hugh Snyder, a German spy. It was a flat order to the commanding general to hang him summarily.

Owing to the peculiar circumstances of the case, he had been tried in *absentia*, convicted and sentenced to death. The order was supported by a transcript of the testimony produced at the court-martial. Another paper was on the official blue of Military Intelligence, carrying a summary of their findings.

"Here's the thing in a nutshell, boys," exclaimed Winter gleefully. He read aloud:

"'After Major Winter's urgent warning, we reopened the case of Hugh Snyder. Certain go-betweens frequenting a cheap tavern in Edinburgh were trailed, which eventually led to the apprehension of the key men of a considerable enemy spy ring. From the stories told by them we pieced together facts that led us to further information, a great deal having to do with Hugh Snyder.

"'As far as the real Hugh Snyder is concerned, nothing has been developed to cast discredit upon him. His father was a German of the older emigration, having been persecuted by the Hohenzollerns, and he held an undying hatred toward his fatherland which was shared by the son. Hugh Snyder was a legitimate and capable

inventor who perfected a time-traveler, which he demonstrated and sold to our government. He was commissioned a colonel and employed to direct its use.

"'This is as far as the record of Hugh Snyder goes. On May Twelfth, Ninteen Forty-one, Hugh Snyder was murdered by his cousin, Hugo Schneider, and his body cremated in the furnace of an old mill near Exeter. His bones and teeth have been recovered and identified.

"'For a long time we had difficulty in learning much about Schneider, but in the end we did. He was a cousin of the naturalized Snyder and bore a close physical resemblance to him. He is also a scientist of sorts. In late nineteen-forty he wormed himself into the confidence of Snyder, begging a place of concealment. His story was that he was a refugee from Hitler Germany and hated Hitlerism, but could not convince our authorities of it. They had put him in a detention camp at the outbreak of the war, from which he had just escaped.

"'Snyder sheltered him. His reward for this was to be brutally murdered. No one knew of Schneider's presence in the house but one trusted servant who was murdered along with his master. We got these facts from the Nazi's own files.

"'He was watched too closely by Captain Kelly to send the details of Column's plans, but he did manage to get the information over as to the location of an important base and suggest its persistent bombing. That was done at once and with devastating results. They have not failed since to bomb the spot at least once daily.

"'As far as Schneider is concerned, he disappears from that point in the German records. They do not know what his fate was. Their last entry is that he failed to show up to an appointment with their head man in the North British area.

"'We presume he is still with you, and that you will terminate his evil career at once. A list of known accomplices with him is attached.'"

Winter folded the paper and replaced it in the big envelope. His jaw was set, but there was a glint of victory in his eyes.

"That makes it simple," said the galley captain. "Let's push on and hang 'em."

"'Until the murder, which occurred a few days after the conference in London at which the Time Column was actually launched, the spy Schneider knew little about his cousin's invention except that it was important and had been adopted by the army. As soon as he was able to examine Snyder's notes he realized what a terrific weapon the Time-traveler could be and did all in his power to undo what his cousin had done. By asserting to GHQ that he had recently re-checked his computations and had discovered grave errors, he hoped that the expedition would be delayed indefinitely.

"'In the meantime, he tried strenuously to pick up his old contacts among the Nazi secret agents, but failing to find one sufficiently trustworthy to entrust the valuable data to, had to postpone the idea of informing the Nazi government the details of what was afoot. Then the GHQ refused to call a halt in their preparations and ordered him north to Callandar. It was here that he began his active impersonation of his slain cousin.

"'Everything points to the fact that he first tried to unsell the British on the use of the machines and tip off his own people. He failed in both, which left him the only alternative of going along with the column and retarding its progress in every way possible.'"

HE paused for breath. "Hah!" interjected Kelly triumphantly. "Just what I thought!"

"There's a little more," said Winter, and continued reading.

"Look at the list," warned Winter. "Eighteen men, and some of them we thought the best men in the Time Column. They're clever devils. They are with him as well as some additional dupes, and they have machine-guns. There are three galleys full of them, and an army of giants to back

them up. They might kill us off, and if that happened the rest of the Column would never get the news. You must go back at once and tell them. Tell them to hurry, and by all means bring the rings. I'm staying here."

Winter prepared to get into the canoe. "What about the messenger who brought this, and the number two traveler?"

"He is waiting for an answer."

"Tell the commanding officer not to permit him to leave. I have ruined Schneider's machine. Bring number two over as well. It is our only means of reconnoitering modern Germany. It may be the one way of saving the whole show."

Kelly started to follow Winter into the canoe, but was waved off.

"No, you go back and help spread the news. I'll send Miller and the men to the shore where you can pick them up. The army can't get here for another week, and while you are gone I have a job here to do."

"Ah," grinned Kelly. "Something connected with the fabulously beautiful empress of Teutonia whom Miller mentioned last night?"

"It has," admitted Winter. He sat down in the teetering kyack and shoved it away from the galley's side with a push of the paddle. The two officers he was leaving were looking down at him as he dipped the blade in for the first stroke.

"Good luck," called Kelly.

Winter grunted and dug for the shore. He felt that a great load had been taken off of him. Now they might really get a break.

CHAPTER XII

A Futile Flight

THE journey back to Valhal was painful and full of danger. It was hard to find anything to eat, for the giants had been thorough in their work. There was no shelter, since no house had been left unburned. Straggler giants had to be avoided constantly, as the woods were full of the brutes, just sobering up from the effects of the last skin of wine they had consumed.

The trip was rendered horrible by the presence of great numbers of corpses. But perhaps the most unpleasant feature of all was the chafing and cutting of Winter's legs by that spiral of metal he wore. He shifted it from one leg to the other every day, with the result that both were soon a mass of raw spots and cuts.

As Winter neared Valhal he found signs of growing resistance on the part of the Teutons, proving that the meekest and most peace loving people will turn and fight if goaded enough. There were dead giants here and there, surrounded by windrows of dead and dismembered Teutons. The giant bodies usually contained plain spear shafts whose only head was a fire-hardened, whittled point. It was a tribute to the valor of the relatively puny people, for they had had to fight men of greater stature who were better armed with massive stone clubs, bronze swords and battle-axes. Small wonder their own mortality had been so great.

Winter was surprised himself one morning when he awoke to find two immense giants hovering over him, one poised to bash out his brains with a monstrous club. He rolled over swiftly from the spot where he had lain sleeping, drawing his pistol as he did. He shot them both without compunction, got up and went on his way.

Late in the afternoon, when he was nearly to Valhal, he met another pair and dealt them out the same treatment. He had hardly left their sprawling bodies behind before he sighted a very extensive body of huge raiders ahead of him, preparing to make camp for the night. He gave them a wide berth.

It was evident that they were in no hurry to press their conquest. It had been an easy one, and they often delayed for days in a single spot. Winter knew that, for he had passed other accumulations of ashes, broken pottery and empty wine skins.

He did not look long, but shuddered and went on. If he had had a machine-gun instead of his single pistol and its meager supply of ammunition, he would have made a shambles of the camp, but there were too many giants for him to tackle.

He passed three other groups like this and avoided them. After that the road into Valhal was clear. He went along it until he came to the Teuton outposts—a disorganized mob of indignant men armed only with long wooden poles, improvised slingshots and other crude weapons of the sort.

They buzzed angrily when they saw him, but he approached with his hands held open before him, soon making them understand what he had come for. He stopped long enough to tell them where the nearest encampment of the giants was, and suggested that the hour before dawn was a good time to slip in and do some discreet stabbing. The beasts would still be lying steeped in liquor. But the peasants shook their heads. That would be cold-blooded murder.

They could not bring themselves to do it.

Valhal was nearly empty. The women, for the most part, had fled over the mountains toward Austria. Only the queen and her familiars stayed behind. Winter went at once to the rambling loghouse which was her palace.

BRUNHILDA'S reception of him was cold and reserved.

"You have seen?" she asked.

"I have seen," he admitted meekly, "and it is vile. I did not know that is all. I believed what I was told. I have come to make what amends I can. At least I can assure you my own people will take no part in it."

There was a commotion in the hall back of him, the sound of scuffling.

"Who are these, then," she demanded imperiously, "and why have you brought them here?"

Two shots rang out, and there were oaths shouted in modern German. Winter wheeled to see the room filling with khaki-clad Twentieth Century troops, slugging and shooting their way through the faithful guard of desperate men who had stayed behind to defend their queen. Snyder did not lead the raiders, but Winter could see him in the background, bawling out directions.

Winter drew his gun, but the intruders were too close upon him to use it. Bulky men tackled him from two sides simultaneously, and he went down in a flurry of legs and fists, beating helplessly against the bodies that penned him to the floor. Someone planted a heavy sock on his jaw, and someone else delivered a resounding kick into his ribs.

He made one last effort to heave the man off who lay on top of him, but it failed. Things blurred redly and he felt weak and sick. Booted feet were standing on his outflung wrists, and heavy hands were about his throat. He went out, grateful in spite of himself for the soothing calm of total blackness.

"What about this guy?" he heard a voice ask, after what seemed an eternity.

Someone kicked him vigorously, but in his condition it was hardly more than a tap, and oddly seemed to have been delivered to another body of which he was only vaguely conscious.

"Shall we cut his throat, hang him, or what?"

"Bring him along. I want to talk to him when he comes out of it. He had a pal with him—Miller. And we haven't been able to find what became of Kelly and his detachment. Maybe he knows."

That was Snyder's voice, cold, calculated and controlled.

Winter's first impulse was to open his eyes. Then he thought better of it. For Snyder continued talking, unaware that his victim had regained his senses sufficiently to understand what was being said.

"Is Queen Brunhilda safely bound? We must watch out for suicide. She is a proud and haughty creature."

"She can't hurt herself," answered his henchman. "She's tied hand and foot and spitting sparks."

Winter heard him move away, chuckling.

"Ah, what a creature! What a find!" Murmured Snyder, talking to himself. "So Nordic, so perfectly Aryan! *Der Fuehrer* will be pleased—*so* pleased. And to think her name is Brunhilda and that her father was called Wotan! It proves the antiquity of our wonderful race. With Goebbel's aid we can soon make her a living goddess for our new state religion. Surely I will get another decoration for this."

Winter nearly choked. His temples pounded. Mingled emotions of impotent fury, blasting contempt, and cold, implicable hatred surged through him. It was all he could do to feign unconsciousness. But he hung on. He had learned much. He might learn more.

"Franz!" called Snyder sharply. "You took this swine's gun. Have you searched him? Has he another?" Snyder planted another kick in Winter's ribs to indicate the object of his questions.

"Nein, Herr Schneider."

"Speak English, you fool, until we are back in the Fatherland again," came Schneider's curt rebuke. "Search him thoroughly."

HANDS groped Winter's prostrate form. They found little of consequence until they came to his lower legs.

"There is something curious here," said a harsh voice, and Winter felt the puttee being stripped from his leg.

"The choke-coil from the Traveler!" cried Schneider, in a dismayed voice. "How did he come by that? *Ach!* If he has ruined that machine I will flay him alive. Throw water on him! Revive him! We must know."

They brought water and doused Winter with it. The water felt good, but the rain of kicks that accompanied it did not. Winter pretended to regain consciousness, sputtered and opened his eyes. A ruffian jerked him to a sitting position.

To Schneider's rapid fire of sharp questions he would only answer with a stupid "I don't know," or "I can't remember," and rub his head dazedly.

"Truss him up and throw him into a cart," directed Schneider venomously. "We'll take him back to camp and work on him at leisure there. I know a trick or two that will make him remember more than he ever forgot."

The trip northward into the lowlands where Berlin was some day to be built was little less than a form of torture in itself. Winter spent the whole of it joggling about on the hard floor of a springless, primitive wagon. Once a day they gave him a little food and water, but otherwise they ignored him. At one stop he heard Brunhilda's voice in indignant protest over something. From that he knew they had brought her along as a prisoner, too. He wondered grimly what King Skrymer's reaction would be when he learned that Schneider had double-crossed him, too.

Winter was fairly content with his situation, uncomfortable though it was. Despite Schneider's recovery of the spiral piece, he felt his sabotage of the time-traveler had been successful. It would take even an expert a long time to find out the full damage, if ever. And Hugo Schneider was no Hugh Snyder.

In a week or so many galleys would be coming from Scotland filled with soldiers of the betrayed B.T.C. When they came this time they would have no delusions as to who Schneider was. But in the meantime what would Skrymer do? Bull-headed, fiery-tempered and with a great horde of his warriors, it was not likely he would accept meekly Schneider's kidnaping of his main objective in this invasion.

Eventually the bone-racking, bruising journey came to an end at a wooded camp near the river's edge. The black ribs of three burned galleys rested on the sand. In the midst of the grove stood the silvery sphere of the No. 1 Time-traveler. Two huskies picked Winter up roughly and propped him against the bole of a tree. Schneider and his head mechanic, Scholz, stepped out of the machine and came over toward him.

"I have good news for you," Major Winter," said Schneider in a mocking voice. "It will be unnecessary for us to trouble you further for information. Your feeble efforts at sabotage

have been uncovered and remedied. Like your not too astute former leader, Chamberlain, what you did was too late and too little. My helper and I rode on ahead two days ago and we have undone that little. As soon as your lady-love and her chattels are comfortably stowed within, my faithful fellow-workers and I will return to our beloved Fatherland. It may please you to know that your suspicions of me have been correct. I have wrecked your Time Column.

"I would like to say *'auf Wiedersehn,'* but that cannot be. Ten thousand years will separate us shortly and you cannot possibly live that long. I am not leaving you food, but I do not think you will starve. Skrymer should be along soon, hunting anybody in khaki. I think I can safely leave you to his mercies."

Winter gritted his teeth, but he remained silent. What Schneider didn't know wouldn't hurt him.

He watched helplessly as Schneider climbed into the machine, pausing only long enough to throw a mocking kiss as he shut the door. For twenty intolerably long seconds Winter stared at the silent silvery sphere. It *couldn't* take off. It mustn't take off! Surely Schneider had not discovered the effect of the little wedges!

Then Winter gasped. He was looking through a vista of trees at the sparkling waters beyond. There was no time machine in his line of vision. It was gone. It *had* taken off! His adversary had triumphed, after all.

CHAPTER XIII

Desperate Venture

WINTER slumped backward, stunned by the unexpected turn of events. Now he regretted fiercely that he had not thrown the spiral connection into the swirling tide of the Elbe when he had the chance. For now not only had Schneider escaped, but Berlin would be warned.

The doom of the Time Column had been sealed. The element of surprise on which they had banked so heavily was gone. They might yet go forward in the shuttles, but it could only be into a trap.

At last he realized that grieving over spilt milk was useless self-torture. Perhaps later they could devise some way around — say, choose another point of attack, such as Munich or Vienna. Meanwhile he must rid himself of his bonds. He had no intention of being too easy a victim for the angry Skrymer.

That did not prove simple. After writhing and wriggling for hours, tugging and contracting muscles until they cramped, he found it impossible. He lay panting and exhausted, having slipped nothing free.

The gnawing method occurred to him, but his most elaborate contortions failed to bring his teeth within an inch of the tough withes that bound him. He rolled over and over on the soft ground, looking for an imbedded stone he could chafe them against. In that damp loam there was no such stone.

Night came. He tried to sleep, but insects deviled him and slimy things crawled over him, and his thoughts were not soothing. A miserable day of growing thirst and hunger followed, and another night even more painful than the first. He hoped vainly that a wandering Teuton might find him and release him, but none came. The depopulation of the country had been thorough. He almost wished the giants would come and end his agony.

It was on the third day that he heard the measured swish of many oars pulled in unison to the accompaniment of a rhythmic chant. Suddenly there were creakings, and human voices shouting. Someone had seen the charred ribs of Schneider's abandoned galleys.

Winter began to make out the words. They were in English. These must be the advance guard of the B. E.F. He shouted until he was hoarse. In a few minutes he could see the galleys coming in and making ready to tie up at the shore. He passed out then from sheer exhaustion.

In half an hour he was being fed and told the latest news. The two vessels had left Scotland just behind the one which Winter had intercepted and turned back. The formation had been dispersed by a storm and these were late. They had not met the despatch boat on its return. They must have passed it in the night. They knew nothing of late developments and were expecting to find General Snyder and report to him for duty.

Winter told them of Schneider's treachery and its discovery, adding only that he had gone "on." taking his men and the Class-A machine with him. He did not see fit to tell them the worst. There was no need of spreading discouragement. He warned them of the probable approach of giants in a bloodthirsty and savage mood, and suggested measures to make surprise impossible. They might have to wait weeks before all the ships arrived.

They dug pits and planted heavy, pointed stakes in the bottom, covering the pits with woven tree branches and thin layers of sod—giant traps. They set up machine-gun nests and stationed sentries. It was well they did. Three days later a group of giants attacked. After that for a week the attacks were almost daily.

The battles were not exciting, any more than the slaughter in the pens of a packing house is. They were massacres. But they were tedious and wearing, and caused a great deal of labor, for every day the huge carcasses had to be dragged down to the water's edge and set afloat on the ebbtide.

MORE and more galleys, all part of the flotilla that had left Scotland first, were arriving. Then one day came the galley carrying Brigadiar-general Forrester, the rightful military successor to General Worrel. He had received the GHQ's communication and had assumed command.

He brought with him one-half the propulsion rings and one of the power plants. He said that the balance of the time equipment together with what residue of gasoline there was would follow shortly. Kelly would be the last to come, having been left behind to see that nothing useful was overlooked.

General Forrester listened gravely to Winter's story.

"I agree with you that the bolder the stroke the better," he decided when the major finished reporting. "If, as you fear, Schneider has reached Berlin, they will probably credit us with caution and expect us to move to another site for our attack. That will involve delay, maybe of months. If we attack promptly and from here, we may yet surprise them in spite of their warning."

Winter went to work at once, setting up the rings and testing out the power plant.

It took three days more to set up the shuttle spheres and pack them ready for the take-off. They already contained the other rings, and had room besides for a thousand men. The single self-propelling one, the number two Class-A machine, stood ready.

Winter planned to make a reconnaissance in it, whatever the risks. If he failed to come back promptly, the others would know a deadly trap was set and take one of the other and slower routes. Instead of carrying along the plane, this time he was taking a company of men armed with submachine-guns and hand grenades.

If the resistance was mild at first, these could hold off the Germans until the rings could be set and the shuttle system put into operation. Kelly was the officer he chose to lead them.

Winter took a last look around. Men stood by the generator, ready to throw in the switch at an instant's notice. The shuttles, except those carrying the other rings and generator set, were packed to the guards with armed men, ready and anxious to go. The battalions told off for the second and later relays stood close by, grouped according to the order of their going. Once the invasion was actually begun, everything must proceed like clockwork. There would be no time then for planning or afterthoughts.

Winter shook hands with General Forrester.

"It's a gamble, sir, but—"

"The whole infernal show has been

a gamble," said the general gruffly. "Thanks to you, it hasn't been a shambles. Good-by, and good luck. I'll see you in Berlin—I hope."

Winter went into the machine. He had taken the precaution to place it and the others some distance from the spot where Schneider had disappeared in his. There was the faint possibility that Schneider had not succeeded in getting all the way to 1941. If any of his damaged power units failed, he would have to stop short. Winter had not the slightest idea of what an inter-time collision would be like, but it was not an experiment to be made blindly.

He sized up Kelly's hand-picked company. There never was a fitter bunch of men. For many months they had been hardening themselves by hunting, hewing ship timbers and lately the hard row across the choppy waters of the North Sea.

Every one of them knew they might likely emerge in the midst of a mine field or to find themselves surrounded by a circle of cannon muzzles. But not a man flinched when Winter set the lever in the second notch forward for the ten-thousand-year jump and reached for the starting switch.

"Let's go!" yelled a wag in a falsetto voice. "Dis iss *der Tag!*"

The lights flickered. They were on their way.

CHAPTER XIV

Invasion

BERLIN in 1941! Men tumbled out into the dark. For a moment they could not see their hands before their faces. Then a flickering like lightning afforded some inkling as to where they were—within some sort of a barnlike building. The place was enclosed but extremely roomy, apparently a shop of some sort, with a saw-toothed roof and many windows.

Strange, inert shapes stood about, and menacing objects seemed to hang overhead. Then the lightninglike light was supplemented by something very like moonlight, except that moonlight did not come on as suddenly as this had. There were thunderous noises all about—a steady, drumming roar, punctuated by both sharp barks and low additional rumbles.

"We've landed in a boiler-shop, by golly!" shouted Kelly above the din, "and there's a night airraid going on."

Winter grunted. He had been quick to identify the dark masses sitting about as locomotive boilers in various stages of assembly. The dangling objects overhead were the hooks of traveling cranes. His eyes were darting right and left, wondering when and from what quarter the first withering fire of the enemy would come.

It did not come.

He ran swiftly to a window and looked out. He could perceive the silhouettes of several nearby buildings—one a roundhouse, obviously—the others probably machine shops. The first contingent of the Time Column seemed to have landed somewhere in the railroad yards of Berlin.

"Okay, Kelly," he signaled the intelligence captain. "Unload the boys and beat it back. The coast is clear now, but tell General Forrester to step on it!"

Kelly ran.

Winter had just twenty minutes to deploy his men and make his arrangements. He told off the machine-gunners to the doors and windows. Others were stationed around the spots the shuttles were expected to appear.

If there were any Nazi watchmen about, they must have been busy at the more inflammable of the buildings, fighting the fire-bombs being dropped. Outside, the rattle of anti-aircraft gun-fire went on, and the repeated dropping of flares by the raiders kept up the illusion of weird moonlight. The ruddy sky-glow of many blocks of burning buildings added to the fantastic illumination.

Winter snatched the opportunity to find a gaping firebox of a half-finished boiler and squatted down in it. Here it was safe to light his flash. By its beam he hastily read the large scale map he had brought along. It did not take him long to identify this

spot and compute the shortest and quickest routes to their various objectives. He located the chancellery, the main radio stations, and the other points that the intelligence branch had mapped out.

His first intimation that the shuttles were arriving came with a resounding crash that echoed through the bays of the vast building. A boiler shell had suddenly been hurled yards by the sudden impact of an incoming time machine. It solved a question that had long troubled Winter—what happened when an object traveling in time collided with a static one?

The answer seemed to be that the moving one had the right of way. Perhaps its momentum did it. He could not know, but at any rate the shuttles were popping up all over the place, and if boilers or their parts happened to have been there first it was just tough on the boilers.

That flinging about of heavy metal objects scattered his reception crew somewhat, injuring several of them, but the rest rushed in and did the work they had been drilled to do. The power plant was snaked out and rapidly hooked up. The ring segments were assembled as fast as men working in semi-darkness could do it, being placed on the very spots where the shuttles had first landed.

The transport shuttles were quickly emptied of their men, and hauled aside until the rings could be set. Then they were shot back into the past for another load as rapidly as could be. In another half-hour there would be a constant stream of them coming and going.

GENERAL Forrester arrived with the next batch.

"What is the situation?" he asked anxiously.

"A pushover, apparently," reported Winter jubilantly. "Not a soul knows we are here yet." He led Forrester to the firebox and showed him the map. The general took it all in a few seconds of swift study.

"Nice work, Winter," he said. "I'll take a detail and grab the big shots. You manage the broadcasting end. Everybody else can scatter and do general strafing."

"Yes, sir." Winter tried to conceal his disappointment. He had hoped for the unique pleasure of trapping Herr Hitler in his lair, along with his bloody-minded accomplices, but rank always had its way and he knew it. He stuffed the map in his pocket and ran to the doorway where the special force of linguists had already assembled.

"Okay, men. We're on our way," he ordered. "Radio communications."

Night airraids invariably throw a town into confusion, however methodically it may be run. To that rule Berlin is no exception. In the first place, the blackout was complete, except as modified by the now dying and intermittent flares and the fires of burning buildings. But where the light was best, the confusion was the greatest, due to the comings and goings of emergency fire fighters.

The Time Columnists had little difficulty in slipping down the various streets undetected. They left their wake strewn with the bodies of unfortunate Berlin policemen who had the hard luck to bump into them, but for the most part the policemen died silently, not knowing until bayonets actually slid between their ribs that their time had come, and never knowing that this was a visitation from the most startling Trojan Horse of history.

Major Winter led the way into the first of the big radio stations. He did not waver a hair's breath from the plans previously decided upon. The Nazis were to be given a taste of their own ruthlessness, for the fate of all might well hang on this night's operations. It was no time for squeamishness. As the invaders burst into the control room they promptly shot down every living thing in it. No operator survived long enough to put a warning message on the air.

Winter looked about him and sighed heavily. Then he found the official telephone and sat down by it to wait patiently. A quick glance told him his staff were all present and at their posts.

The Free-Frenchman was at a transmitter, as well as the Dane and the Norwegian. His Balkan linguist and an assistant, had taken over another. Elsewhere was a Dutchman with a bitter grievance, a Pole, a Belgian, an Italian, a Czech,—in fact, representatives or spokesman for all the overrun, enslaved and exploited victims of Nazidom. Every one of them burned with an ardent desire to begin sending his message of hope. There was not one who would flinch at the penalty, if their *coup* failed.

It seemed an eternity, but it was actually but a matter of a few minutes before the telephone rang and a cautious voice asked the code question agreed upon.

"You can speak out," was Winter's answer. "It's all over here but the fireworks."

"Then let 'er go," ordered Forrester over the wire. "The chancellery is ours, and we've rounded up the whole foul gang. They don't like it."

"To blazes with what they like and dont' like!" yelled Winter, hanging up with a bang. He turned.

"Shoot the works, boys."

A CLAMOR of calls went out on the instant. A moment later fervid, impassioned appeals were flooding the ether in every direction. Berlin had been taken by a British column!

Hitler was in captivity, as was all his mob, including the chiefs of the army and navy, who happened to be in conference at the time.

Come on, everybody! Start your long delayed offensives. Slaves! Arise and throw off your masters! True Germans! Now is the time to rehabilitate the former good name of your country. Make it worthy of your great musicians, scientists, poets and mathematicians. Plaster all of Europe with your Vs for victory.

The flood of eloquent pleading rolled on—parallel messages in every language and dialect of polyglot Europe. Winter saw that it was going over big and relaxed a bit. Presently the phone at his elbow rang. It was Forrester.

"How are you doing?"

"According to Hoyle, sir. What's the dope?"

"Haven't missed a connection. The upside people have certainly done their part. Funny thing the Quislings and all the other Nazi stooges can't believe we've cut the guts right out of the show. They keep phoning in and yelping about their troubles. If they're right, there won't be a live Nazi loose in either Denmark or Norway by daylight. Same thing in Holland—everywhere. The Balkans are seething. The Russians are advancing.

"What about Germany proper?"

"No different. We had no idea how many decent Germans there are. They are rioting everywhere. We have a rumor right now that the navy has mutinied, but we haven't been able to confirm it yet. Keep on pumping out the good news."

WINTER'S gang kept at it. From time to time he re-established contact with General Forrester, but always the news was good, or better. Berlin, caught by surprise from within and with a half-starved and rebellious population, was a hundred percent in the Time Column's hands. Armies from the outside were beginning to pour across the borders. Communication with Italy had been broken off minutes before, but the latest reports indicated chaos there. One seemingly accurate bulletin recounted the attempted flight and assassination of Mussolini.

Winter hung up, grinning like the cat who had just got outside a canary.

"At last, Frieda," he murmured, "you are avenged!"

Instantly he jerked upright. Conscious mention of Frieda brought Brunhilda to his mind. What had happened to that fine, brave and intelligent woman ruler of pre-historic Teutonia?

Not a single word had been heard of Hugo Schneider and his villainous crew.

The Nazis had not been warned. This meant that Winter's sabotage of the number one time-traveler had

been successful after all. The Nazi Fifth Columnist was trapped somewhere on the shores of the infinite sea of time.

Major Winter, his face white and set, staggered erect and groaned aloud. For Brunhilda, the fair, the gentle, the good, was trapped along with Schneider. Winter had won, only to lose. But how could he have foreseen that the Nazi spy and saboteur would abduct Brunhilda? Bitterly Winter smote his forehead with his clenched fist.

Then he was called back to the telcphone to receive word that the Atlantic fleet of the United States was steaming eastward to assist in the policing of the now chaotic Europe. This information had to be correlated to go out over the air.

Winter had no time for personal despair.

The rest of the night went like that.

Dawn found a tired and haggard crew talking huskily into the mikes, but not a man present thought of quitting. Breakfast could go hang. Sleep could go hang. Their pounding pulses told them they ought to be outside fighting with the mop-up crews, but their better judgment reassured them. What they were doing was far more damaging than any amount of trigger pulling. Bulletins were coming in fast now, and were being broadcast to the world as fast as received.

The Allied victory was fast being turned into a landslide.

"Just what we figured on," Winter managed, rubbing his bloodshot eyes and gulping down another cup of coffee. It was real coffee, too, sent over very thoughtfully, by Forrester from the confiscated private stocks of the big shots of Nazi gangsterdom. In fact, it was the very best of coffees —Herr Goering's own private blend. "Yes, Germany was nothing but a shell, just like the time before. This time the lesson ought to stick."

"Providing the so-called statesmen think up something better than they did at Versailles," spoke up a linguist dryly.

"Yes," agreed Winter thoughtfully. "We've still got the job of unscrambling eggs ahead. Some say it can't be done."

For a little while there was a lull. Winter sat tiredly where he was, thinking over the implications of that last remark and his own answer to it. Of a sudden a queer gleam came into his eye.

"I have it," he said to himself, half out loud. "If—if only. . . . "

WINTER was itching to do things on his own, but things happened so swiftly and the official pressure on him was so great that he could not. It appeared that overnight he had become an international hero—not only on account of his handling the propaganda broadcasts that lurid night, but on account of the invaluable aid he had rendered the Time Column in general.

He was especially commended in inner circles for the important part he had played in the exposure of the spy and saboteur Schneider, and advanced to the rank of colonel. Incidentally, despite their ransacking of the files of the erstwhile Gestapo, nothing could be found about Schneider since his unplanned departure from the Twentieth Century in April, 1941. Wherever he had gone in the damaged time machine, it had not been back to modern Germany.

Winter wanted to take the serviceable number two class-A traveler and go back to search for him—and Brunhilda—for it still had 30,000 unused years in its power batteries. But he was kept busy at the Allied headquarters now set up in the Wilhelmstrasse. Moreover, the machine itself was inaccessible, having been moved to a spot near the Brandenburger Arch and enclosed in glass. A triple row of sentries kept the gaping crowds back, and no one, not even the Peace Commissioners themselves, were allowed to pass those lines. It was the one souvenir of the war that would be kept intact for the admiration of posterity—the single really potent "secret weapon" that had ever won a war.

CHAPTER XV

Reich-Empress

AS has been the custom from the remotest times, the peace conference opened with pomp and ceremony and stuffed shirts were as plentiful in attendance as genuine statesmen. Far more plentiful, for the hierarchy of statecraft has never assayed more than ten percent of statesmanship to the ton. Much of diplomacy is routine, better left to trained clerks, and some of it pure blah.

So the stuffed shirts shouted, some demanding impossible reparations, others prating of the necessity of dividing everything on linguistic grounds or religious, or racial (whatever that may mean), or according to whatever bug happened to dominate their shriveled, opportunistic minds. Others thought of economic consequences and tried to talk in regional, even continental terms.

Secret treaties were uncovered, only to be howled down. After three weeks of getting nowhere there was not a single proposal that had the endorsement of more than one or two members. The liberated German people were especially apprehensive, as were the more enlightened genuine statesmen present. All they could see was the old cycle of vindictive punishment, its consequent resentment and rebellion and armament races all over again. Before the century could expire, another World War would be inevitable.

Among the onlookers were Forrester, Kelly, Miller and Winter, heroes all, and privileged characters. They shared the misgivings of the more sober-minded men who were striving to put across reasonable, liveable terms in the face of the wave of implacable, vindictive fury. The peace conference threatened to bog down any day. A war amongst the former Allies seemed almost inevitable. The situation was perilous in the extreme.

Then one night Winter unburdened himself to General Forrester. The older man listened to him gravely, nodding from time to time.

"It could be," Winter was insisting fervently. "If so, she'd be a natural." He blushed ruddily and added somewhat confusedly to his seemingly incoherent remark, "Besides, it means everything—do you understand—*everything* to me to find her if she is still alive."

"I agree," said the general without argument. "It will take some wrangling, but we will do it. It won't be hard to have myself appointed as provisional governor of conquered Germany. If after that we cut a few corners I doubt if many people cry for our blood. I'll back you, my boy. Your hunches have been good up to now."

"What about Adolph?" inquired Winter. "You know perfectly well they will never actually try him. They threatened to do that with the Kaiser, but when the sticking point came they all got cold feet."

"When I'm governor of occupied Germany, I may be a little careless about that, too." The general folded his hands placidly across his bemedalled chest and smiled knowlingly. "It —er—certainly won't be murder. You cannot even call it exile. Hop to it, Winter. In three days I guarantee you'll have a free hand."

"That's all I want to know," said Winter, and his look said more than words could have conveyed.

Exactly on the third night thereafter an astonished captain of the guard at the International Shrine saw a huge dray approaching, accompanied by a small army of laborers and drawn by several gigantic tractors. Colonel Winters hopped off the dray and presented a set of orders. They were from the temporary supreme boss of Germany. They were brief and to the point.

It is decreed that the appropriate place for the Time-traveler Shrine is the spot where it emerged. Therefore it is ordered that the machine be at once removed to the Feurrot Boiler Works. Colonel Winter will have complete charge. Signed: Forrester.

It was after midnight, but everything had been provided. The captain saluted and ordered his sentries aside. The workmen demolished the glass enclosure and transferred the silvery globe to the dray. Winter gave the tractors the signal to move, beckoning the guard to follow.

It did not take long to reinstall the machine in the very spot in the former boiler works where it had first materialized in modern Germany. The work had hardly been finished when an army truck rolled up. Winter checked off its contents with a sardonic smile. Three cases of hardtack, two slabs of salt pork, a bag of *ersatz* coffee, and a gunny-sack bag that gave out a metallic rattle when shaken. The invoice tallied.

WINTER personally carried the stuff into the machine, the laborers having already been dismissed.

The next queer proceeding of the night was the arrival of the Berlin equivalent of the Black Maria. The prison van chugged in and stopped in the middle of the floor. Captain Kelly was in charge. Winter, who had said little by way of explanation, now spoke.

"You guards take your stations outside the building and let no one come in until I have come out. That may be several days from now, but that is the order."

The captain saluted and whistled to his men. Winter waited until the last of them had gone. Then he called Kelly to him, the only man still inside the vast empty plant, except the van-driver and its discreet guard of four men.

"Keep 'em covered," whispered Winter, then gestured to the van escort to open the door.

It was a strange group that emerged, sputtering and indignant. There were a dozen prisoners—Hitler, Goering, Himmler, Goebbels, Von Ribbentrop, Von Papen—the whole of the topmost of the gang, in fact. Under the guns of two of the hard-faced guards they walked gingerly to the Time-traveler and entered at Kelly's order. They had dished it out themselves often enough. Now it was their turn to take it. Most of them took it philosophically, but one blubbered like a child.

"Take the van away," ordered Winter abruptly.

He stood watching until it was through the door. Now the building was empty save for himself and Kelly and two trustworthy soldiers guarding the prisoners inside the machine.

"All clear," he said to Kelly, and they followed their prisoners in.

Before he set his lever, Winter stripped the cover off the power units. A sidelong glance had told him his prisoners were safe. They were huddled stupidly in the offside of the machine under the watchful eyes of the two armed guards.

No one in the sphere could fail to note the twitching fingers that rested on the triggers of the machine-guns. Those boys *hoped* there would be an attempt at a break.

"Look, Kelly," explained Winter. "I'll show you what I did. You see, there are exactly ten power grids, separated by thin diaphrams. Since the machine is good for only fifty thousand years, each grid is powered for five thousand. That is why we progress in leaps of that length. I wasn't sure whether the power was drawn proportionately from all, or one by one, but when I drove those little wedges in the control board of the other class-A machine I disconnected all of them from each other. My guess was that they are used up one by one. The first four of these are therefore dead."

"Uh huh," said Kelly.

"Okay. I split 'em up secretly that way, but to cover up, I also tore off all these topside interconnections as well as taking away the master coil. Do you follow?"

"I do," said Kelly. "Mr. Schneider stepped aboard and replaced the obvious leads. With the coil he found on you he thought he had all of it. Only the last unit wouldn't work."

"Exactly. *He* knew that the first eight were dead, so he did not bother with them. He jumped them and was

smart enough to hook on to the ninth, not knowing the tenth was disconnected. That left him only five thousand years available. You see, I wet those wedges after I drove them in, so they would swell and push the diaphrams out of alignment. Then I knocked them out and put them back into my pocket. The displacement is so small he would never notice, yet it kills the machine."

"You think then," queried Kelly, "that he stalled at the year 3,000 B. C., here in Germany?"

"I feel certain of it," said Winter, and he set the lever at one notch.

THERE was the usual five-second period of burring, jarring, time travel. The machine halted. Winter flung open the door and he and Kelly stepped out.

Less than a hundred yards away, as Winter had hoped and expected, lay its mate—Machine Number One. The hour was dawn and no one was about except a solitary figure forlornly attempting to build a fire. At least that is what they supposed he was doing, for there was a pile of coarse grass assembled and the man was departing in the distance apparently looking for more.

There did not seem to be much likelihood of his early return. As far as the eye could see there was nothing about but a desolation of sand-dunes interspersed with hard clay patches covered with short, stubbly grass.

"Looks as if Germany was harder hit by the plague than Scotland," remarked Kelly, pointing to the dry ravine that had once been a deep river. "They had drought here as well."

"Uh huh," said Winter absently. "Suppose we get out those boxes before we go into the other machine." Somehow, now that he was here, he shrank from what he might find in Schneider's Time-traveler.

They brought out the dry provisions and set them down. Winter now ripped open the burlap bag and dumped out its contents. Glittering in the hot sun were ten old-fashioned bowie knives. He and Kelly picked them up by their points and hurled them as far away as they could throw, in every direction.

"Now," said Winter, and started grimly for the Schneider machine.

There were but three people in it. Brunhilda and her one hand-maid were huddled in one corner, fast asleep. Both looked pale and somewhat thinner than when he had last seen them, but nothing as compared to the emaciated, haggard condition of Schneider, who was also asleep on the other side.

The food had obviously run out, and most of his pirate crew deserted him. Dismantled machinery lay all about the place, showing the desperate efforts the spy had made to complete the last five-thousand-year leg of his trip.

Winter woke Brunhilda gently, holding a warning finger to his lips. There was no time for sentiment. He helped her and the maid from the Traveler and across to his own machine.

"Wait here," he said, halting them at one side of it. "I'll come for you shortly."

He went back to Schneider's machine and woke him by stirring him with his booted toe.

"Up you come!" he ordered crisply.

SCHNEIDER awoke with a start. Incredulity, dismay, and then burning hope leaped in mad succession across his haggard features.

"Winter!" he cried out in a hoarse croaking sound. "You escaped! You came here to rescue us?"

"Give me your key to this machine," said Winter curtly.

The spy was trembling in his eagerness to obey. His nerve was completely gone. Winter silenced his babbling with an impatient gesture.

"Get outside and wait there—murderer! And while you wait, keep reaching for the sky."

Captain Kelly passed the stumbling Schneider at the machine entrance. The intelligence officer had a paper-wrapped bundle under one arm. He smiled grimly at the befuddled spy.

"This is one job of sabotage I am going to enjoy," he said with relish.

"Okay," said Winter. "Plant your

bomb and set the clock for half an hour."

Kelly deposited the time bomb and adjusted it. Together they left the interior of the number one Class-A machine, and Winter locked the door behind them. Ignoring Schneider's frantic questioning, they marched the captive over to the second traveler. Here Winter stood so as to shield the two bewildered women while the two guards marched the squad of Nazi prisoners out onto the barren plain.

Schneider gaped in astonishment and then fell to his knees before his helpless and hapless leader. It was a sorry picture.

Assisting Brunhilda and her handmaiden to enter the number two traveler, Winter turned and beckoned the guards and Kelly to him.

"Just one word," he said curtly, addressing the forlorn and dismal group of Nazis. "You scoundrels wanted to conquer a continent. Here is one. Help yourselves. I have provided food for a limited time—possibly a month, if you ration yourselves. There is more—if you can live to find it. Your stooge Schneider can tell you about that better than I. Your law is the law of the claw and fang, your philosophy that of the survival of the fittest. There is no better place anywhere than here to try it out. Beat it!"

"You didn't tell 'em about the knives," Kelly whispered to him.

"They'll find 'em," grunted Winter. He was wishing ardently he could stick around and see the finish, but there were more important things to do. He entered the time-traveler and closed the door.

In a moment the No. 2 Traveler vanished.

"DO you understand now?" Winter said softly to Brunhilda, as they stepped off the platform and hurried through a side corridor back to the room where they had been waiting for that summons. Behind them applause shook the auditorium whence they had just quitted. The peace conference had gone mad with joy and relief. The deadlock was broken. A formula had been found.

Brunhilda did not reply at once, and Winter repeated his question.

"Not altogether," she answered in her quaint, archaic Germanic tongue.

"The German problem appeared insoluble," he explained. "Basically the people are not much different from the rest of us, but from the very beginning of their empire they have been steeped in the most hellish, inhuman doctrines until it is now almost part of them.

"Bismarck preached blood and iron. Nietzsche prated of the superman and exalted the 'devil take the hindmost' rule until it seemed divine. The Hohenzollerns were convinced of their superiority over the rest of mankind. Hitler carried all those philosophies to their absurd extreme. He transformed a race of frugal, industrious, family-loving people into automatons of a gigantic, cruel fighting machine that was feared and hated by all the world."

"But why? Why, Yack?" She clasped his arm.

He smiled. For days he had been trying to teach her to say "Jack," but somehow she could not manage it.

"Why? Because they had been taught that that was their proper function. They had been taught it from the cradle. They have been sadly mislead and warped. Once before they attempted world conquest. The outside nations united against them and beat them down. They imposed harsh terms, and instituted democracy.

"But it would not work. The Germans are unacquainted with the democratic method. They have a wholehearted contempt for it. They are accustomed to be ordered to do things, to be regimented. They could not believe that any other people were as good as they are. So a new and worse Hohenzollern arose—Hitler. We had to do the job all over again."

He paused for breath, and also because it was hard to keep on talking about world politics with her standing so close to him.

"You are the ideal answer," he went on, deliberately moving away a few inches. "They worship the Nordic type—meaning by that tall, fair peo-

ple. You are that. They worship the Teutonic tradition. You were one of the founders of it. To them you are close to being a goddess. They worship authority. You have wielded it gently, and over a similar people. As a ruler, you will satisfy them. That is why you have been chosen."

She frowned slightly.

"Perhaps the Germans, yes. But why do their enemies receive me so joyously?"

"Because twenty thousand men have seen your own empire and know how well it was administered. We do not fear your control, because we know you are not filled with conceit and unbounded ambition. Because under you there is a chance of the Germans maintaining a place in the world and still not be a menace to the rest of it. Your own country is extinct. You cannot go back. You have no choice. You must accept."

She wiped out the several inches of space between them with one impetuous movement. She clung to him like a fearfully frightened child.

"Oh, Yack," she cried, "there are so many people, there are so many *things*, the houses are so big . . . I can't do it alone!"

"You won't have to do it alone," he whispered, holding her tightly.

A moment later three frock-coated statesmen hesitated in the doorway, then stopped. They were a committee, consisting of eminent prime ministers. They exchanged quiet, knowing smiles with lifted eyebrows. Then they turned and gazed out into the corridor.

After an appropriate length of time one of them coughed discreetly. After all, they had their message to deliver. The German delegates had accepted Brunhilda as their Empress and were willing to treat on the revised terms offered.

Jack Winter was content. It is not every man's lot to have to go ten thousand years before he finds his bride, but somehow it did not seem that long to him.

Next Issue's Novel: VIA JUPITER, by EANDO BINDER

DECADENCE

By RAY CUMMINGS

Author of "Out of Smallness," "Shadow World," etc.

Impassive in the fat Master's ray, the oncoming Vita did not fall

At the End of History, Man Is Trapped on the Brink of Extinction, Faced by His Greatest Enemy—Himself!

SITTING in the leafy nook with his arm around his bride, young Roc Lork was ecstatically happy. From here they could look down over the shining moonlit lawns, past the splashing fountains to where the artificial canals were like a tangle of glistening threads. To the right, down the hill, the great Atlantic was placid. To the left, far away beyond the distant Altona agricultural fields, the dark forest rose into the distant

BEGINNING "THE ROBOT SAGA"

mountains of the Adirondacks. Every little island between the threading canals was a bower of flowers.

Miela, sitting beside Roc, was beautiful in her brief, gay-colored summer robe, adorned with garlands of pink, yellow and blue. Roc, too, was in festival attire—a slim young fellow in gaudy holiday cloak and colored robe that came to his knees. Beneath the narrow garland of flowers on his forehead, the moonlight illumined his pale, intellectual face with its clean-cut, sensitive features.

"The signal will come soon?" Miela whispered excitedly. "Then we will run?"

"Yes," Roc said.

His arm tightened around her waist.

In this age of human happiness, with all of everyone's life devoted to pleasure and almost nothing else, surely no one was ever as happy as young Roc Lork tonight. He turned, smiling at his radiant bride.

"We will run," he added. "They will have trouble catching us."

It was their wedding festival. Only an hour ago they had been married. And now, when the signal came from the merrymakers down the hill, all the laughing young people in the festival grounds would hunt Roc and his bride. They woud find them, of course, because the couple had to stay within bounds. And after being found, they would be pelted with flowers.

It was a beautiful life that mankind had now. Roc, who had studied the dim records of history, often told himself that he was fortunate to be born in an age like this. In the dim and distant past, man always had to struggle and fight. Out in the dark, lush forests and especially where the rivers emptied into the sea, there were giant ruined cities, almost buried beneath the silt of centuries, with the forest growing over them.

IT was different, now that everyone lived only for pleasure. The summer village of Altona was spread in the lovely woods beyond the gay festival grounds, gaudy thatched dwellings banked with flowers. The winter village was dark now. Only its translucent roofs could be seen, under which in the artificial heat still there, could be summer, with music and flowers and banquets and love.

"That Vito must be very clumsy," Miela said suddenly. "Listen, Roc."

Not more than fifty feet from them, under a gay canopy, the Great Master Paul was eating his banquet with Mistress Rhada and a hundred others of the Altona government. Old Paul's fat, flabby body was sprawled in his chair like a huge toad. Most of the other old people at the festival were under canopies near them, eating and drinking at smaller tables. A giant Class C Vito was serving Paul. Abruptly in the night air the great master's voice floated up to Roc and Miela.

"Ho, Vito, stop acting so sullen! You have no skill at serving me, anyway."

"I am sorry, master," the Vito's clipped, toneless voice replied.

"I do not care for your emotions," old Paul declared. "What is your label?"

"I am Norgg—two-in-four."

"You are rated wrong for Class C. Norgg is your label? I shall remember to order you lower-rated. Report to your B-commander that I wish another in your place here."

"Yes, master."

For a moment the giant Vito, more than six feet tall, seemed to linger. In the moonlight his body ornamentation gleaned dull-gray. A synthetic creature of the laboratory, he was fashioned in the guise of a man. The fibroblast flesh of his ugly face twitched and his small, deep-set eyes seemed resentful.

"Go!" Paul roared. "Do you want me to strike you down? Tell your B-commander that you are offensive to me."

Silently the Vito began striding off toward the towering metal buildings of the Fibroblast Laboratories.

Centuries ago man had created the first primitive Vitos and slowly, through the generations, had improved them.

In this one field he had kept his science alive, because it was the Vitos who did all of the work, giving human

beings more time for a life of pleasure.

Including educating and rating, it took only two years to turn out a Vito of the Class A, genius rating. Only a year and a half was needed for Class B, mental workers, a year for Class C low-grade, and the Class D, moronic drudges required only eight months. But at least two decades still were necessary for a human being to attain full maturity. Raising Vitos was easier, cheaper, more efficient and more pleasant.

It was an intricate process, the work in the big Fibroblast Laboratories. Roc himself was not familiar with it, but he had often heard the details from his father.

At first the pre-embryonic fibroblasts—selected sections of living tissue—were grown in transparent globes filled with the clear blood serum from which all the cells had been removed. In this stage the fibroblasts nearly doubled their size every two days, at intervals washed free of poisonous waste. Then, still in their globes of liquid plasma, they were switched onto the moving lines that carried them into the Surgeons' rooms. There they were cut back, grown again and grafted onto other type tissues.

The grafted fibroblasts, ever larger and more intricate, at last were modeled onto a platina skeleton, which was built in the guise of ancient man. Then the individual Vito was clothed for ornamentation and tested for imperfections, finally released for service to men.

"THAT Vito should not have stood staring at Great Master Paul like that," Roc said.

"Listen!" Miela cautioned.

Down the slope, at the banquet table, the woman Rhada had murmured something to old Paul. He was laughing contemptuously.

"A Vito? Why, one wrong word out of any of them and I would paralyze them all with the peace ray! That would teach them a lesson."

Long since, the scientific engines of war had been neglected, forgotten. Only the peace ray had been preserved, a projected vibration with a range of a hundred feet that caused a temporary paralysis of the muscles. In all Roc's lifetime he had seen it used only twice and then for serious blunders. A Vito, being built of living tissue with controlling brain and responsive muscle fibre, was as responsive to the peace ray as a human, of course. Consequently the punishing beam was kept as a disciplinary device.

Roc and Miela saw the shadow on the moonlit grass beside them, but they heard no sound. Though they were hidden here, a Vito could unerringly find them, scenting and following their trail from where they had last been.

"What do you want?" Roc demanded.

This was also a Class C Vito, one of the smaller models, about the size of Roc himself. His clothing ornamentation was of brown fabric, with the badge of his rating on his arm. The puffy fibroblast tissue of his face had a scar-fold which raised his upper lip so that he always seemed to be leering.

"Your father would see you," the Vito said. "He is at the laboratory, at Entrance Twelve."

"Now?"

"Yes, please. There is a hurry. And this girl, your wife, he said bring her."

The Vito clipped his heels together, bowed at the waist and was gone.

"I cannot understand what Father could want," Roc mused, bewildered. "But surely it must be important for him to disturb our wedding festival. It will not take long. We will be back here in time for the hunting."

"But, Roc—" she protested.

"When my father sends me a request at a time like this, it must be more important that our pleasure here. We will go, Miela."

The grim walls and towers of the Fibroblast Laboratories loomed against the purple starry sky. The rambling terraced building was set on the cliffside, overlooking the shining sea. With his arm around Miela, their bright tasseled robes fluttering in the wind. Roc made his way back from the flowered hilltop, threading

the little path at the edge of the cliff.

"It is queer that Father should send for you also, Miela," he said. "And what is he doing in the laboratories? I cannot understand it."

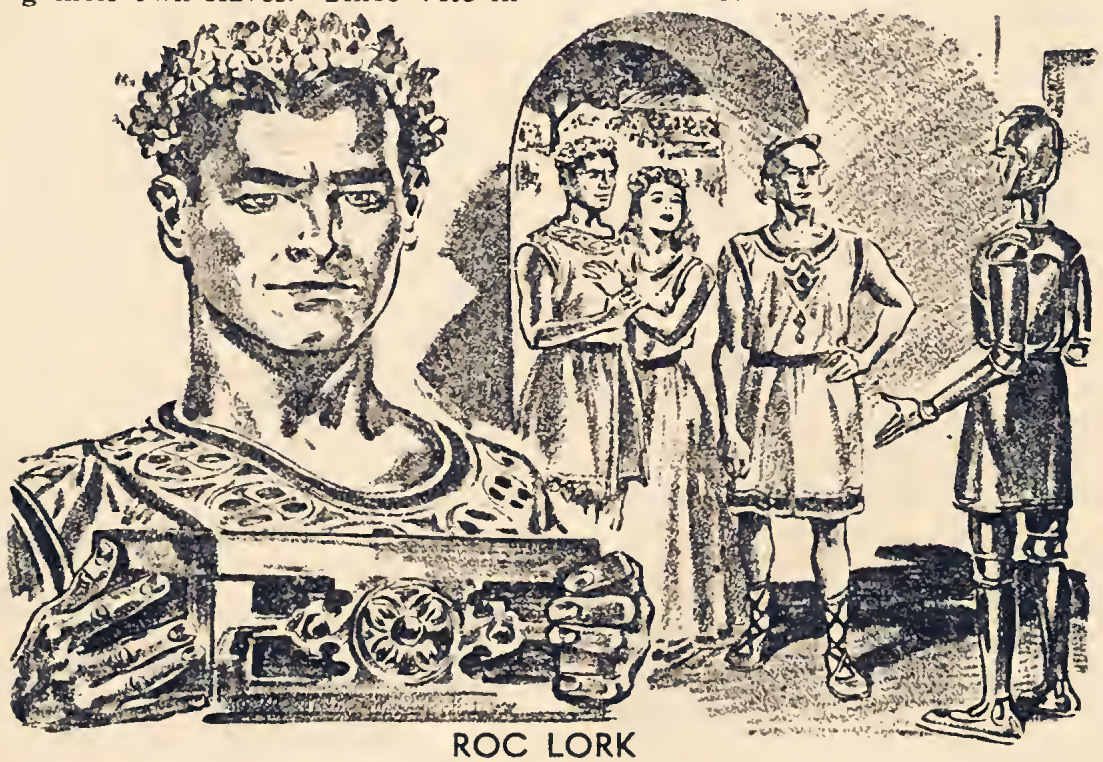
SOME years ago Roc's father, Jon Lork, had been in charge of the fibroblast buildings here. The work in the laboratories in past generations had always been done by human scientists. But gradually the Vitos themselves had proven that they could relieve men of even the task of creating their own slaves. Since Vito intelligence could be controlled to the last brain convolution, the synthetic geniuses often surpassed their human creators. When the development of Class B mental workers proved satisfactory, a small number of Class A was created and trained for surgery.

Jon Lork had finally built a Vito of A-plus rating and labeled him Teck 2T5. Only a year after Teck came from the laboratory, he had proven that he could manage his birthplace better than even the remaining human directors. Great Master Paul had naturally removed Jon Lork. There was no more dignity for a man working in the Fibroblast Laboratory than anywhere else. Vitos were constructed for work. Therefore men should devote themselves to pleasure.

For a generation now the Vitos had been creating themselves. Roc knew that no human had been in this laboratory for several years, until his father suddenly visited it tonight.

In the pallid phosphorescent glow of the arch above Entrance 12, a Vito stood silent, on guard.

"Jon Lork sent for us," Roc said. "Is he here?"



ROC LORK

The Vito gestured.

"He is in the entrance room. He wishes to interview the chief manager, the Vito Teck."

Roc's anger rose.

"Wishes?" he demanded. "You mean he has ordered Teck down here. Stand aside."

Obediently the guard moved and Roc drew Miela through the archway into the building. Miela gasped, awed by the vast and complicated place.

In the dim room to the right, silent, efficient Vitos moved back and forth along the aisles, between tiers of

shelves. Globes of clear plasma ranged the shelves, in which the little fibroblasts were floating. These, however, were the pre-embryos merely of Class D. Down the long corridor, through its end door, one of the D surgical rooms was visible. Swathed white figures, the surgeon Vitos of Class A rating, were modeling the platina skeletons—powerful, broad-shouldered frames with flat-panned skulls for the Class D product.

"Roc, I am here. Come in."

Roc's father was in a small waiting room to the left of the corridor. He stood in the doorway, garbed not in the festive gaudy attire, but in the more sober recreation garments of daily life. In the glow of the cold light from a side brazier, his thin, hairless face was grim and taut. His sparse gray hair was plastered on his glistening scalp by rivulets of perspiration.

"You sent for us, Father?" asked Roc anxiously.

"Yes. Come in here."

They went into the secluded little room.

"I have ordered the Vito master, Teck, to come down and see me," Jon Lork said, his voice low and swift. "There are things I want to tell you. Talk softly. No Vito must be allowed to hear us."

"But, Father—"

"I have feared for a long time that something was wrong with the Vitos," Jon Lork interrupted. "I have found out what it is. They are creating themselves unchecked, with no human to know what is going on. I have had reports from the other villages where the Fibroblast Laboratories are in operation. All are smaller than this one of ours, yet the same. The Vitos control them, for there are so few humans left who are willing to do anything. Do you realize, Roc, that the Vitos not only work for us, they just about think for us, too?"

IT sounded strange to Roc, a man actually talking of something besides pleasure. He and his father were furtive and tense, it was as though this were a scene out of humanity's almost forgotten, distant past.

"You, Roc, were brought up like all the young people of this generation," the old man continued. "All of us have grown soft, decadent. What else could happen when a race stops progressing? There is danger to all of mankind. For example, did it ever occur to you that the Vitos could have grievances?"

"Grievances, Father? Why, I don't see how they could."

"I have noted signs of it. They are rational entities. They think perhaps more keenly now than most of us. Isn't it possible that they resent a life-cycle of nothing but work, with always the pleasure-loving humans around them? Their senses would probably respond to pleasures just as ours do. And among them, too, there could be some—this Teck, for instance—developing a lust for power. Man in the past certainly had that and now has lost it. Man was once very glorious, Roc, struggling upward, always fighting to achieve what he hoped would be perfection."

Miela and Roc could only stand staring. To Roc it was as though all the established order of his life were tumbling down about him with his father's words. He knew his father felt the same, for there was a tinge of bitterness in the old man's low, swift tone.

"Man cannot live only for pleasure and survive, Roc. I've tried to preach that to some of our people and Paul ordered me to stop. He calls it heresy. There are so few humans left who are willing to face facts, to do any thinking that could interfere with their pleasure. But I have had reports from just a few, in other villages, who are also frightened."

"Frightened?" Roc's arm tightened around Miela. "You should have told me all this before. I am grown now."

"I should have, I know. The Lorks have been a great and noble family. There were generations past when we made amazing advances in science. You know I have old records of human science. My father got them from his father, and he from his, far back through history."

"Tell me why you have sent for

Teck," Roc demanded of his father.

"He will be here any moment. There are things I must say to you and Miela first. You, my new daughter"—his thin hand went to her shoulder, where the pale hair that framed her face was streaming down—"you will perhaps have my grandson in your care. If anything should happen to me,—if what I fear should ever come, I want you and Roc to teach your children and your children's children. They must spread the word everywhere.

"Humans cannot live only for pleasure and hope to survive. And man, who has been so glorious, must not become static and—extinct. Tell your children and your children's children that they must work to save the race. That is what the Lorks must stand for. We have been a great and noble family. Remember that always."

"I will remember," Miela promised in grave bewilderment.

"I will, too, Father," Roc said soberly. Suddenly conscious of the little garland of flowers around his forehead he snatched it off with the feeling that it belonged to his irresponsible past. "What is it you fear?"

"That something is going on here in the laboratories, unknown to us humans," replied Jon Lork with grim directness. "If there is, I propose to find it out tonight."

"We have the paralyzing ray," Roc pointed out. "Even tonight, when everyone else is thinking only of pleasure, there are a few of the ray guns around. I heard old Paul say—"

THE tapping of a Vito's heels on the stone flooring of the corridor outside the room had checked him.

"My son, listen," Jon Lork said swiftly. "If it should be that I have no chance to talk to you again alone, remember that metal box containing the science records of our family."

Roc nodded hastily.

"I have hidden it out by the brow of the hill. There is a cairn of stones there, a few paces beyond the angle of the old stone wall and close against it. Get it, Roc. Keep it and study the records. Do what you can, if the worst should come—"

His murmured words died away as Teck 2T5 stood in the doorway. Roc's heart began pounding as he stared, unable to believe that he, a man, could feel a thrill of fear before this synthetic thing of man's creation.

"You sent for me?" Teck asked tonelessly.

His slim, erect, six-foot body was ornamented with leather clothing, with devices burned into the leather to denote his Vito rank. His A-plus rating was emblazoned large on his chest. His over-size head wobbled slightly on his spindly neck, where the fibroblast tissue was puffed in scarfolds. His face, with glowing dark eyeballs, was unsmiling.

"Yes," Lork said. "I wish to be guided by you through the laboratories to check on the Vito production. What it has been in past moons, and what now is in progress for future."

To Roc it seemed that there was a breathless pause of horror.

"So?" Teck breathed at last. "And you bring me an order for that, from the human Master Paul?"

"I give you an order from myself," Lork said sharply. "The command of a human to a Vito. There is compounded within you the necessity for obedience. You have no order to the contrary?"

"No, I have not." Was that irony Roc detected in Teck's twisted smile? "I have my production orders given me two years ago. Of the lower class ratings, I produce fifty each moon. That is a little more than replacement for the dying in the Sunset Home. I have sometimes thought it would be more efficient to rejuvenate those whose tissues are dying, but my orders are different."

"You follow that production?"

"I follow my orders, of course, though the finished output of Class D will be a little low, two moons from now. We have had some difficulty with the fibroblasts of the muscular tissues. A somewhat different process for muscle growth and for washing the embryos free of poisonous waste was needed. My chemists and I have solved it satisfactorily."

"And the composition of the fibro-

blasts," Lork asked, "remains unchanged?"

"It does. I have had no orders to the contrary."

"In the grafting and compounding processes of the living tissues, from the pre-embryos to the second and third graftings, there have been no new developments?"

"Small technicalities of procedure," the Vito responded. "I have on file no orders for any changes."

"Thank you. I understand."

"And that is all?" A thin smile seemed to appear on the Vito master's impassive, tight-drawn face.

"No," Lork said. "I will inspect the laboratory for verification."

The Vito master bowed. Then his somber, glowing gaze flicked to Roc and Miela.

"I give you request to take only you," he said. "Too many would cause distraction among my workers."

"I agree," Lork answered. "That was my intention. Take Miela back to the festival, Roc."

"But, Father—"

IN JON LORK'S eyes was a light of steady purpose, as though shining from his myriad ancestors, who had not been afraid when there was a dangerous task to be done.

"I shall meet you presently at the festival, he said with finality. Then he added, with his voice just perceptibly quivering: "You will both remember what I told you?"

Silently Roc nodded.

He led Miela back along the corridor and out through the glowing archway of Entrance 12. The Vito guard stood silently aside to let them pass. Hand in hand, with their gaudy festival robes fluttering in the night breeze, they picked their way along the moonlit path.

"Oh, Roc, I am so frightened!" Miela whispered suddenly.

"Be not afraid," Roc said. "I shall plan with Father what we must do."

"And we are going to the festival now?"

"No." He stopped on the path and drew her into the shadow under a tree. "I should not have let Father go in there all alone, Miela."

"You could not help it," she soothed.

He stood trying to ponder what he should do. Thought of the festival was abhorrent to him, yet there was nothing that he could plan until he found out what his father had learned.

"We shall wait here," he said softly. "Surely Father will be out soon."

The shadow was black under the tree. From here, over a corner of the hill, a segment of the gaily lighted festival grounds was visible. The Vitos were everywhere, doing the work that had to be done to keep this little world of humans going. At the back of each of the flower-bedecked barges on the canals—barges carrying laughing young people—one of the Vitos was poling the craft along. Others were attending renewals of the cold lights or bringing food for the banquet tables.

Out beyond Altona, in the fields, agricultural Vitos were little black dots, struggling with their work in the moonlight. They worked at the looms and in the food-cookeries. They roamed the forests and killed animals for tissues and pelts. And it was Vitos who carried the messages from one human settlement to another, who bartered the goods which one settlement had and the other needed.

With his father's grim words burning in his mind, Roc saw what an artificial bubble human life had become. It was a bubble that could burst so easily. . . .

"Do you think he will be in there very long?" Miela whispered at last.

"I do not know. If only—"

He sucked in his breath with a gasp. The frowning wall of the side of the laboratory building loomed high, not more than fifty feet away. From a glowing laboratory window high up, a dark, oblong blob was abruptly pushed out. It came hurtling down, crashed on the ground and lay motionless.

Miela almost screamed, but Roc shoved his hand fiercely over her mouth. Her cry died in her throat.

"Be quiet!" he whispered harshly. "No Vito must hear us!"

"But that — that bundle over there—"

"I shall see what it is."

It seemed that his heart was tearing loose from its moorings in his chest and his blood running like freezing water, making him shake with cold. He tried to fight off a horrible premonition.

As he advanced he saw the blob more clearly. He forgot Miela, rushed and threw himself down beside the broken form lying on the darkening ground.

"Father!"

JON LORK lay crumpled, broken by the fall. A gaping knife-wound in his chest was crimson with his blood, welling out to stain his shirt. But Jon Lork wasn't quite dead. His ghastly, pallid face twitched. His eyelids fluttered up. He was trying to speak. Faintly the agonized Roc caught the words:

"You—tell old Paul—"

But Jon Lork could not finish. He lay quite motionless, white as death, with his eyes closed again. He was unconscious, but he was still breathing.

Roc leaped erect.

"He wants to tell Great Master Paul something," he gasped.

He lifted his father's slight body up, began staggering away with it. There was nothing in the chaos of his mind save that he must get help, medical attention for his father. But that would have to be a Vito surgeon! There was no human who had such knowledge or skill!

"Is he dead?" Miela asked in an undertone of horror.

"No. I don't think so. Not yet."

She was trying to help him with his limp burden as they staggered down the hill. Then the gay colored lights of the festival grounds were illumining them. People were crowding around them, horrified, frightened, excited people, all babbling questions.

Roc staggered through them. Panting, he halted by the table of Great Master Paul.

"My father!" he gasped. "They—the Vitos—have stabbed him." He had only the strength to put the broken body down on the ground. "My father—he's not quite dead yet—there must be a surgeon—who might save him."

The banquet table was a turmoil. Old Paul was on his feet, his fat, flabby body unsteady on his spindly legs. But for all that there was something commanding in his attitude and his shocked, angry voice.

"What is this you say? Vitos did this to my friend, Jon Lork?"

A Vito had been serving at the banquet table, but like a sliding shadow he was gone.

"A Vito did this?" old Paul roared. A projector of the peace ray appeared like magic in his hand. "I will strike them all!"

A gasp from the babbling crowd checked him. A woman uttered a low, frightened cry. Then Roc saw that on a nearby grassy mound a giant Vito stood. The colored lights gleamed on his huge figure, no more than fifty feet away. It was Norgg, the sullen banquet-server whom Paul had dismissed earlier in the evening. He stood now with his scarred fibroblast features twisted into a leer of defiance.

"You?" Paul demanded. "You, Vito, you dare come here? Then you shall be the first."

His gun leveled, then it spat with its hissing, almost invisible yellow ray. The beam caught the defiant Vito full on the chest and face, the weird saffron light illumining him, clinging to him. The crowd gasped, awed, expectant. But in a second it was a surging cry of amazement and terror. Then there was an awful, stunned silence.

The Vito did not fall! With his leer merely widening, he stood impassive, bathed in Paul's ray. Then one of his dangling hands came up, leveled, outstretched before him.

Roc, on his feet now like all the crowd, was staring numbed. In the Vito's hand was a gun—not a peace ray gun, but a weapon of a strange, new design. Its violet flash spat at Paul. The rays crossed with a crackling of interference sparks. Then the flabby body of Great Master Paul went down, a horrible, ghastly, leprous thing, with part of it melting away as it fell.

For another breath it seemed as though amazement and dread so shocked the crowd that everyone was paralyzed. The peace ray would not work against a Vito. The Vitos had built a secret weapon of their own. Paul was dead, a leprous horror!

The crowd broke loose into turmoil. As though the shot that had killed old Paul had been a signal, from the near-by darkness other Vitos were coming like ferocious animals intent on the kill, beams of death before them.

Roc stooped. Jon Lork, with a little dying consciousness suddenly flaring in him, was trying to talk.

"Roc—they—they changed the Vito fibroblast flesh— They have been—compounding rubberoïd in their—living tissues—synthetic rubber—you see? Toughening—and insulating the flesh—the—the paralyzing ray can't harm them."

"But we can do something, Father."

"We're helpless, my boy. They—they plan to strike—every village tonight. They have built themselves—an electronic weapon—run—and remember—"

Vitos, with toughened, desensitized flesh, so that the vibrations of the paralyzing ray were harmless against them! And their own weapon was of ghastly deadliness!

Roc could only crouch, numbed, with the panic and turmoil of the festival surging around him. It was a long moment before he realized that his father no longer was breathing. He leaped to his feet, pulling Miela up with him.

Already the gaudy banquet grounds were a shambles. Vito rays were stabbing. A babbling, screaming woman staggered past, still on her feet, though a Vito ray had torn savagely at her flesh. Off to one side a group of humans was trying to make a stand with their peace ray. The pallid, useless bolts were swept away before the leaping Vitos.

"Power and glory to Vito life!" the giant, murderous creatures were shouting as they came, spreading out through the festival grounds.

All the humans were trying to run. The night was hideous with their screams as they fell. Roc found that he had gripped Miela and started running, two terrified people clad in hideously gay tasseled robes.

"Oh, Roc—what will we do?" she panted. "I want to find my mother."

"We will find her and mine," he gasped without conviction.

THE sky was red behind them. The Vitos were burning the summer village. The festival grounds were a charnal scene of horror and death. Death lay everywhere, but out of the murder trap a few humans were escaping. From one end of the little hill a group of them came running, men and women, babbling with terror.

Roc dashed toward them.

"My mother—where is she?"

They caught him and Miela in their rush, for a moment carrying them along.

"Your mother? A Vito killed her. I saw her fall."

Roc went white with shock. He would have turned back, but they checked him.

"The summer village is burning," someone babbled.

"Our peace ray—it would not work. Something is wrong with it."

"The Vito weapon, though, burns every human apart."

They babbled as they ran, yet they did not know where they were fleeing to. Blindly they just ran away from this murderous horror, out to where the forests were thick and dark.

"We will try to get to Philona!" one of the men shouted.

"No, that is too far," someone yelled back. "Harl is closer. We can get to Harl in a day and a night."

"This Vito uprising is everywhere," Roc gasped. "Philona and Harl and every human settlement. My father discovered the plot too late."

"I want my mother!" Miela wept.

"We shall try to find her, Miela. She has run. We will probably find her with the survivors in the forest."

Suddenly he remembered the box of science records which his father had hidden. The ancient, crumbling stone wall was not far from here. He gripped Miela and dashed for it, found

the pile of stones, cast them aside and seized the box.

The horror of the stabbing, hissing ray beams of the Vitos, the grim Vito shouts of triumph, the screams of agony of the humans—it all faded back into the distance as Roc and Miela ran. They ran until they had no strength left. Roc clutched his precious metal box and gripped his young wife's hand, running until the depths of the forest brought the strange comfort of darkness and silence. But not one of the fleeing humans they joined could tell them of any of their loved ones.

"We will locate them," Roc murmured to comfort Miela. "If not tonight, then tomorrow."

Tonight and tomorrow and the next day—all the future seemed to hold nothing but an abyss of terror.

"At least we will be together always," he said. "I will take care of you somehow, my wife."

"Yes, Roc, I know you will."

In the split tick of a clock, the bubble of man's false Utopia had burst. Humans were fugitives, hunted creatures threatened with extinction.

At last Roc and Miela could run no longer. They threw themselves in a little thicket, with Miela huddled in Roc's arms. A group of other human fugitives was nearby, most of them exhausted, too. There would be others joining them tomorrow, no doubt. They might be a hundred or two, heading for Harl, but others would be fleeing from Harl and would meet them. Surely a little settlement in the forest could be built. It might grow, with others joining it.

"I was thinking of what my father said," Roc panted. "We were a noble, scientific family once, Miela. We will be again. Man, who has been so glorious, must not become extinct. We have to survive, but we also have to progress."

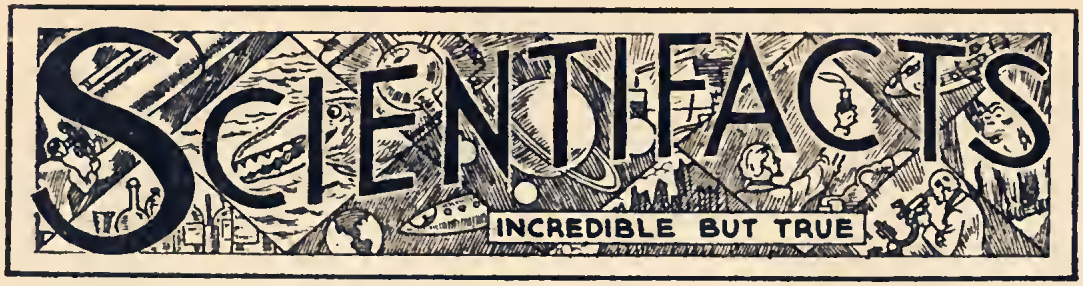
He lay thinking of it, planning.

"I shall study human science," he resolved, clutching his precious metal box, the records of science which had come down through his family. "There must be some way to overcome the Vitos, some weakness in them. But before we can overcome the Vitos, we must overcome the principal enemy—our decadence."

After eons of dominance on Earth, man had to learn the weakness of his creation and develop his science to combat that weakness. But, lying on the ground in the forest, Roc felt confident it could be done. Already he felt the veneer of decadence slough off him like the skin of a molting snake. Man's greatest foe—himself—would soon be conquered.

Then would come the battle against the Vitos.

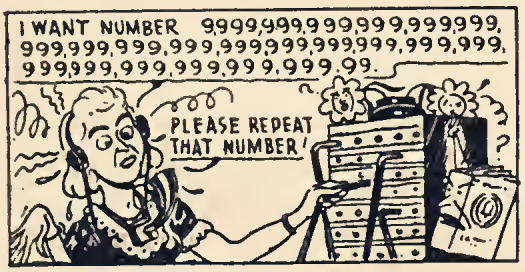
Next Issue: FUGITIVE, Another Story in "The Robot Saga"



THE DICTIONARY'S LARGEST NUMBER

WHAT is the largest number one can speak—in any language? In the June, 1941, THRILLING WONDER STORIES, in this department, was given the largest number—in Arabic numerals—which makes any sense to science—the figure 1 followed by 110 ciphers. But who can speak it?

The lexicographer has no name for a number higher than a decillion, a unit followed by sixty zeros (English



numeration) or thirty-three zeros (American-French numeration). Thus, the largest number it is possible to speak—take a deep breath, we're taking off—is:

Nine hundred and ninety-nine thousand, nine hundred and ninety-nine decillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine nonillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine octillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine septillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine sextillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine quintillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine quadrillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine trillion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine billion, nine hundred and ninety-nine thousand, nine hundred and ninety-nine million, nine hundred and ninety-nine thousand, nine hundred and nine-nine dollars, ninety-nine cents, nine mills.

In other words, squeezing out the last possible digit which can be spoken intelligibly, we have the unit 9, followed by 68 more 9s. The addition of one mill, the fraction of a cent, throws the entire figure forward one unit—into a nameless region.

BEAN—SOUTH OF THE PECOS

CHEMURGY, synthetics, plastics—in an endless stream new products march out of science laboratories. The Age of Steel is rapidly being overtaken by the Era of Plastics. Latest comer into its lusty own is the lowly coffee bean.

What has been done with synthetic rubber and the soy bean and casein products but opens the door for the molded world of tomorrow.

During the last ten years, to keep the market price from dropping below a ruinous level, Brazil has burned or dumped into the sea enough coffee to supply every human being in the United States with coffee three times a day for nearly three years.

Comes now Caffelite, the coffee bean plastic which is highly resistant to water, heat, alkalies, weak acids and electricity. Each 132-lb sack of coffee

thus processed yields one pound of caffeine, two gallons of coffee oil and a good hundred pounds of plastic. The natural colors of the bean permit a variety of tinted plastics without the use of dyes.

The big plant under construction will have a capacity of five million bags per year, producing as a side-line twice the world's present consumption of caffeine.

Caffelite can be melted and remolded as often as desired; it can be made rubbery or permanently hard, opaque or translucent, furnished in almost any color save white. Now you may have your coffee and drink it, too.

MAGIC OF SURFACE AREA

THE development of the gas mask in response to chemicalized warfare was inevitable. From the simple early method of tying over the mouth a pad of cotton waste previously dipped in a solution of sodium thiosulphate and sodium carbonate this life-saving contrivance has grown into an instrument of great precision and efficacy which not only protects the eyes as well as the mouth but which works on everything from horses to baby carriages.

The present gas mask of the United States' Army—conceded to be about the most efficient in use—filters the contaminated air through a small canister containing only two or three ounces of charcoal activated by granules of soda lime and permanganate. Not enough material by volume or weight to fill a tea-cup.

But here's the joker. The charcoal used comes from coconut shells, ground into such small and irregular particles that one teaspoonful contains more than 10,000 square yards of absorbing surface.

"LIGHT" GROWTH

ALL plants do not grow toward the light. This reaction to light, known as phototropism (which means a turning toward light) shows two results, positive (as in the sunflower) and negative (as in the aerial roots of many orchids). Also, there is a marked seasonal effect on flowering plants, not traceable to temperature changes. This is due to the change in the length of the day.

This discovery was made in the study of the Maryland Mammoth tobacco plant, which grew steadily throughout the season, sometimes reaching the height of 12 feet and being eventually cut down by frost before it even formed flowers.

By artificially shortening the day to 12 hours in a greenhouse it was found that flowering could be brought about at any time of the year. This has led to subsequent investigation of many plants which have been found to belong to this group, chief among which are the soya bean, aster, chrysanthemum and poinsettia.

On the contrary, most grasses and many other plants require a long period of daily illumination for the initiation of flowering. In Nebraska a hybrid variety of corn grows so fast in the sunlight—six inches per day—that the actual sound of its growth can be picked up by a michophone.

MOTHER EARTH WAXES PLUMP

IN spite of man's attempt to consume and destroy matter in his many ingenius ways, the Earth is constantly growing heavier. According

to Dr. Fletcher G. Watson of the Harvard College Observatory at Cambridge, Mass., something like eight to nine billion meteors strike our atmosphere every twenty-four hours.

Except for the occasional stray chunk of matter which reaches the ground in the form of a meteorite, this stuff disintegrates and settles imperceptibly on us as stardust at the rate of not less than one ton per day. Some scientists set the estimate much much higher.

By use of a modern delicate mechanism which computes weight by the pull of gravity on various metals it has been agreed that the present weight of Earth is about six septil-

lion tons. In spite of this enormous poundage, Mother Earth will definitely show the effects of her steady increase of four hundred tons of avoirdupois—in a few million years. Ah, this expanding universe!

THE VAUNTED TWENTIETH CENTURY

AT THE dizzy rate progress has been shoving civilization forward the past quarter-century, perhaps the six mightiest influences on modern life are the telephone, the radio, the automobile, the airplane, the motion picture—and rayon material. Oddly enough, not one of these six magical genii are products of the twentieth century.

Alexander Graham Bell was granted his patent on the telephone in 1876. Marchese Guglielmo Marconi applied for his first British patent for wireless telegraphy in 1896. While the Wright brothers secured their first airplane patent in 1906, the internal combustion engine was invented in 1875 by the Austrian, Siegfried Narkus, and gliders had been in use for more than a hundred years, although the most famous exponent of gliding was Otto Lilienthal who, with his brother, began to make experiments in 1867.

The motion picture emerged from the laboratories of abstract science in 1894 as the Edison peep-show device known as the kinetoscope. And J. W. Swan produced the first artificial silk with commercial possibilities in 1884.

And, like every other notable achievement, each one of these inventions has an illustrious history and many progenitors behind them. What price twentieth century superiority now?

THE SOURCE OF POND FISH

HOW do newly formed lakes or ponds, without assistance from our natural fisheries and hatcheries become stocked with fish? There are several possible methods.

Fish-eating birds sometimes fly long distances with live fishes in their bills, droppng them accidentally. Fish eggs may be carried from a source to a fresh pond in the mud clinging to the feet of birds. Small fry may possibly be carried by underground channels from one body of water to another. And sometimes strong winds pick up columns of water containing fishes and carry them great distances, thus explaining some of the variously reported "rains" of frogs and snakes and fishes. Or, if this doesn't suffice, will somebody please page Charles Fort?

SEA LEVEL

THERE is, without consideration of the tides, a difference of two feet in the mean water level of the Pacific Ocean. The sea is twenty-four inches higher on the Australasian side than it is on the American, according to Dr. H. U. Sverdrup, director of the

Scripps Institution of Oceanography.

This pile-up of waters against the western shores of the Pacific is caused by the action of the trade winds which blow steadily across the ocean from the northeast and keep two great currents moving westward in the tropical Pacific.

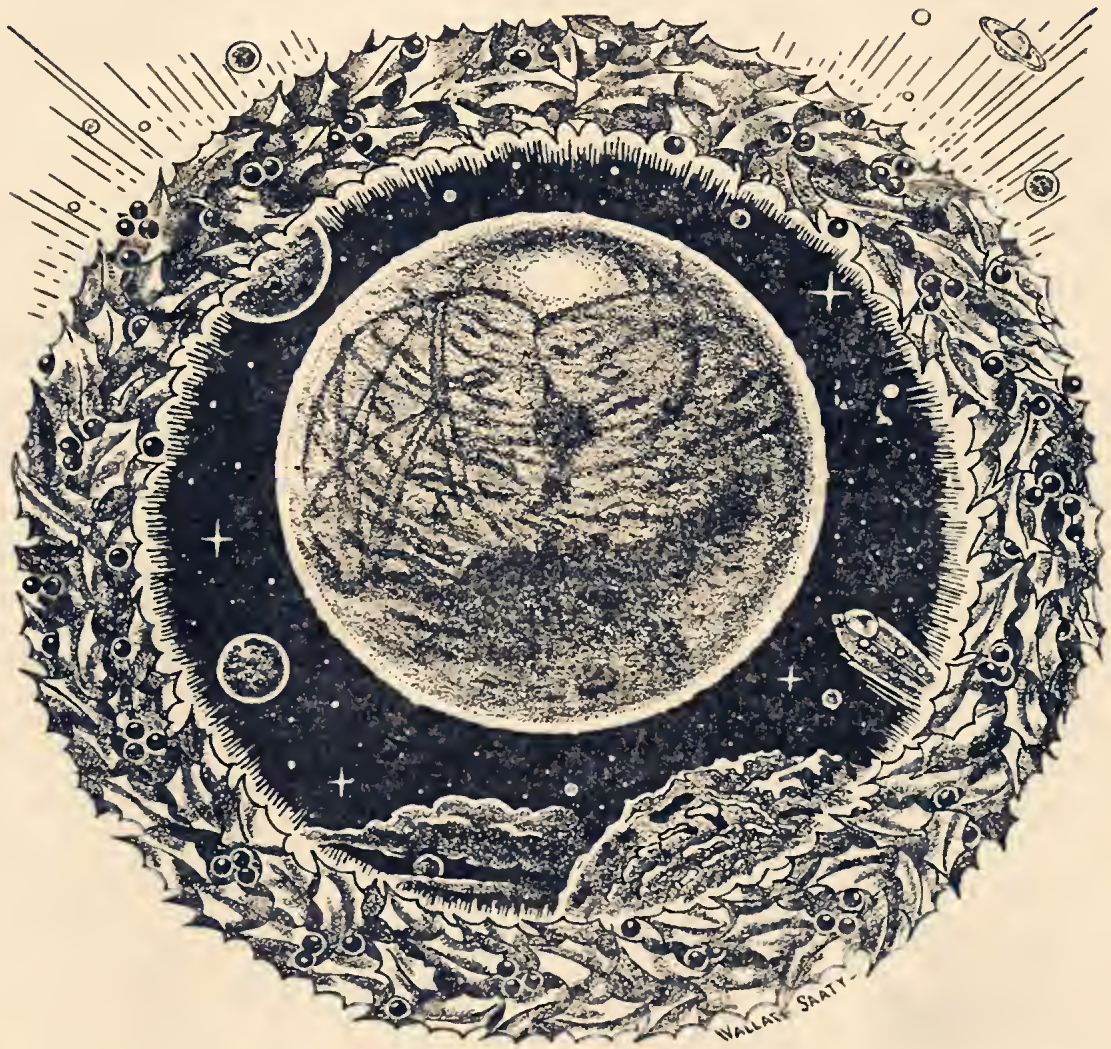
DID YOU KNOW THAT . . .

THE normal person breathes from fourteen to eighteen times per minute . . . the average blood pressure of an adult should be one hundred plus his age . . . the actual difference of one size in shoes is one-third of an inch in length . . . in cloth measure one nail is two and one-quarter inches . . . a cubit is eighteen inches, while a Bible cubit is twenty-one and eight-tenths inches . . . but what is more amazing (without taking a pencil and figuring it out) that the better than two billion human beings living on this globe could be neatly packed away in a half-mile cube, while the germinating life essence capable of producing all these teeming millions could be contained in half an aspirin tablet?

CHRISTMAS ON MARS

By WILLIAM MORRISON

Author of "Bad Medicine," "Undersea Snatch," etc.



PHOBOS, the inner satellite, has just risen in the west of the Martian sky, and set out swiftly to cross the slower and smaller Deimos. Three of the ragged kids stared at it as if they had never seen the racing moon before in their lives.

The fourth, Kel Ankar, sat quietly on the hard intransite sidewalk. With monotonous strokes he sharpened his

The Dead End Kids of the Red Planet Hit the Outlaw Trail—Until a Man in a Scarlet Suit Shows Them a New Path!

knife. The blade, made of the naturally occurring jovite, a recently discovered alloy of copper and iron, was already razor-keen. Its sides were so smooth that they reflected the two moons into Kel Ankar's eyes as clearly as if they had been intended for mirrors.

Kel Ankar was unusually small and dirty, even for his twelve years. It would have taken a keen eye to perceive through the grime that covered his face that he was half-Earth and half-Martian.

On the other three kids there was even more dirt than on Kel, but their faces were characteristically of Earth. They had broad cheek-bones, close-set eyes and large teeth, so no mistake was possible. But Earth to them was only a name. They had never seen it, except as a planet shining brightly in the sky. They had been born and bred on Mars.

"What's the matter, Kel?" Monk Smith asked casually. "Ain't it sharp enough yet to stick somebody up?"

Kel didn't answer.

"Kel likes to cut them up," Skinny McCoy said. "Tough guy, Kel."

Buck Henry, the youngest of them, had a face that—once the dirt was removed—would have enabled him to pose for the portrait of a cherub. He spat through the space left by a departed tooth.

"Takes after his old man. You gotta be tough in this racket."

"I ain't gonna cut nobody up," Kel grunted. "Not if they come across, I ain't. But if they're wise guys"—his arm flashed out suddenly and the jovite blade glittered in the air—"I'll slash 'em to pieces. That's what I'll do. That's what my old man would have done."

They were silent, impressed by the mention of Kel's father. Buck Henry was the first to recover.

"Hey, fellows," he piped, "you know what night this is? Just before Christmas. It's a holiday."

Monk, proud of his changing voice, growled:

"You're nuts. Christmas comes in winter. This is right in the middle of summer."

"Are you a dope!" Skinny put in. "Everybody knows the seasons on Earth ain't the same as here. It's winter on Earth, or at least on one hemisphere—eastern or western, I forget which. That's what counts."

"They say a big, fat guy called Santa Claus," Buck Henry offered uncertainly, "gets all dressed up in a red suit and comes around handing out presents."

KEL laughed harshly. It was not a natural laugh, but a sinister thing patterened after the ghoulish chuckle of the Jovian Ghost on the telescreen. All the same, it was effective.

"Santa Claus! That's a story for babies. And about that present business, the only present I ever got was a lickin' from my old man when he was still alive. I don't remember much else about him, but I remember that. If I meet that fat guy in red tonight, you know what I'll do? I'll give him this!"

The knife blade flashed again, slit open an imaginary stomach. Buck Henry drew back involuntarily. Then, ashamed of his timidity, he yelled shrilly:

"Hey, fellows, I got an idea! Let's play pirate. I'll be the Black Pirate and Kel can be chief of the Interplanetary Police. Monk and Skinny can be his lieutenants." His voice became childlishly grim. "Get your hands up, Chief. I got you covered with this ray gun. Oh, you wanta try funny stuff, huh? Take that! Zzzz!"

"Cut it out," Kel said. "I don't wanta be no cop."

"But it's only a game."

"I don't wanta be no cop even in a game. My old man was a pirate and the cops tried to kill him. I hate the dirty rats."

He ran his knife blade against the edge of the intransite sidewalk again, then stopped suddenly. He heard the sound of footsteps. All four heads were raised tensely.

"You think we ought to try it, Kel?" Monk breathed. "It seems like somebody alone. Maybe he's got dough on him. Maybe—"

"Too far away," snarled Kel.

The tenseness passed away. Buck Henry's voice rose cheerily again.

"You know what? They say that on Earth you can only see one moon and on Venus you can't see any. Ain't that funny? A sky without two moons. And when they do have one, it takes a long time to go across the sky. Not just a few hours, like Phobos."

"Shut up," Kel told him. "Don't try to show us how much you know."

Footsteps rang out again, louder this time, and slowly coming nearer. Monk, his eyes gleaming, asked:

"How about it, Kel?"

"Quiet, you dope," Kel whispered. "If it's a dame, we'll lay off. Dames scream bloody murder and there's no way to shut them up. But it don't sound like a dame. It sounds like a man, a big man. Well, I'll handle him with this knife. I'll—"

HIS voice died away. The stranger had approached close enough to be seen.

"It's a cop," Kel said disgustedly.

His knife slipped quickly under his shirt just before the Martian policeman stopped, his eyes narrowing as he gazed at the ragged group.

Disturbed by something he saw in Kel's face, the policeman's hand dropped to the slender blackjack loaded with anesthetic gas that hung from his belt.

"What are you kids doing here at this time of night?"

Kel didn't answer. He watched Skinny, one hand placed daintily on his hip, prance across the sidewalk.

"We're going to a fancy dress ball, Officer. I'm going as a Jovian three-footed heel, which looks exactly like a cop. Want to come along?"

Kel saw the policeman's red face turn purple. But he saw, too, that the man did not lose the self-restraint that seemed to be inborn in the Martian race.

"You little fools, do you know what night this is? It's Christmas Eve. What are you hanging around here for, when you can get a free meal at the Martian Rescue Home just for the asking?"

"So that's why they were handing out free meals," Kel said wonderingly. "Christmas. Buck told us it was Christmas and that folks gave out presents, but I didn't know the Rescue Home did it, too." He grinned impudently at the policeman. "We had a couple of meals early in the day. Two apiece, both rotten. They wouldn't give us any more, so we're hungry again. What good did it do us?"

"I'm not going to argue with you kids," the policeman replied. "Break it up and run along home. Get me?"

"Yes, Officer," Kel said politely, and grinned.

"And if I see you hanging around again, I'll run you all in."

"Sure, Officer," said Kel. "We'd better go, fellows. You heard what the officer said. Good-bye, Officer. It's been so pleasant meeting you."

They began to saunter away. The policeman stared after them, not quite believing his ears. Suddenly, as if on signal, they turned and gave him that peculiarly obnoxious noise known as the South Mars cheer. Then they ran as if all the fiends of Saturn's marshes were after them. The policeman, too far away and too dignified to pursue, glared helplessly, his head wagging from side to side.

The four stopped at last.

"You know what?" Kel said. "I was just hopin' he'd start something. I'da showed him I can take care of myself."

"What good would your knife be against his gun?" Monk sneered.

"Suppose I threw it and caught him by surprise. I met a guy three days ago who said he killed more than ten men on Pluto, just by throwin' a knife. I been practicin'."

"Aw, that guy musta been a hophead."

"Maybe," admitted Kel. "Even so, it's a good idea."

Buck Henry sat down on the sidewalk.

"You know, fellows," he said, "it's kind of late. Maybe I oughta go home to my sister. Since the old lady's been sick, she's got to take care of the dump and she kind of worries about me."

"Sure." Kel's lip curled. "Go on home to mamma. We got work to do. We gotta hold up a guy."

"I ain't scared, only my sister worries—"

"She's got a right," said Kel. "With a guy like you runnin' around loose, she never knows when your nose needs wipin'. Scram, little angel."

There were footsteps again. They were soft and far in the distance, but they were coming closer. When Kel put his head down to the sidewalk, their sound was much more distinct.

"Go on home, baby," he said.

Buck's lower lip quivered, then stiffened.

"I'll stay. I ain't scared. It was just my sister—"

"Shut up and get into the shadow of that house." Kel's face darkened. "And it sounds like a dame."

Monk shook his head. "It ain't a dame. It's a little guy, walkin' light on his feet."

"A little guy? Then he won't give us much trouble. But it don't make no difference. I could handle a big guy just as easy."

The man was approaching rapidly. He was whistling to himself and the curious four heard, without recognizing, the Earth's old tune of "Jingle Bells."

"Wait for me," Kel whispered. "When I jump out, you follow."

THE man was carrying a bundle under one arm. As he drew close, they heard the whistling stop and saw a smile begin to spread on his face. Then the whistling began again, soft and as beautiful in tone as if the melody had been played on a golden flute.

Kel's muscles tensed. He swallowed hard, leaped out of the shadow, his knife shining.

"Stick 'em up, mister!" he ordered gruffly.

The scared but loyal three leaped after him, surrounding the man. What happened after that they never got straight. Kel cried out in pain. The knife fell to the sidewalk. Then they were running in every direction, each intent only on saving himself.

The man was smiling curiously. A beam of light flashed from his right hand and the fleeing Kel stopped dead in his tracks. The light whirled around. Monk stopped, then Skinny and finally the frightened Buck Henry.

The man collared Buck first of all.

"Come with me, you big, bad crook!"

He gathered the others together, put away the queer ray gun he had used, and examined them at leisure. The light from Phobos was cut off by the house, but the fainter Deimos was almost overhead. To a man with keen eyes, the features of all four were distinctly visible. The man smiled at them pleasantly.

"Now perhaps you'll tell me the idea in back of all this."

"It's a holdup," Kel answered sullenly. "So what?"

"And what made you four gentlemen go in for crime?"

"Because we like it, see? Because it's the only way we know to get any dough."

"His old man used to be a pirate," Buck volunteered. "He's gonna be one, too, when he grows up."

"Shut up, you dope!" Kel told him gruffly.

"I get the idea," the man said. He stared at the knife again, still lying on the ground, then at Kel. "Your technique isn't bad, considering your limited weapons, but your choice of a victim might have been better. Next time don't pick a man like Michael Diston, who happens to be an Interplanetary Policeman."

Kel's face was a flaming red. It was bad enough to be caught, but to be made a fool of was a lot worse.

"Ah, just my luck," he muttered bitterly.

"There's no sense in my turning you over to the police," Michael Diston said. "And there's even less sense in my letting you go loose again. The next victim may not be as lucky as I was. Christmas Eve is a bad time for any man to be held up, so I guess there's only one thing to be done with you. That is, if you're hungry."

"What's that got to do with it?" Kel asked suspiciously.

"Do you think you could manage to eat at this time of night?"

"Just try us, Mister!"

"Of course, if you've just eaten—"

"We can eat again."

"How would you like to see Santa Claus?"

"Save that stuff," Kel growled. "We ain't babies."

"Yeah," said Skinny. "A guy gets dressed up in red, puts a pillow next to his stomach and makes believe he came down a chimbley. You can't kid us."

"I wouldn't dream of trying," the man drawled, "but it'll be some swell dinner."

He couldn't lose them after that.

IT was a short walk. They stopped before a small house of unified plastic construction just as Phobos was finally overtaking the slower Deimos. An old lady came to the door, her face beaming, and exclaimed:

"Michael!"

"Hello, Mother," the man said and kissed her, while the four kids looked on awkwardly.

"I knew you'd get away," she said. "You haven't missed a single year. No matter when Christmas falls, in spring or winter or summer, you're sure to return."

"I had an important case, but I cleared it up in time. However, Masters unfortunately is busy trying to clear up a jewel robbery somewhere on Neptune. He couldn't get away."

"I'm sorry, Michael. Mr. Masters is such a nice man."

Diston grinned. "He has one trouble, though. He eats like a Mercurian eight-footed horse. And rather than have the food go to waste, I've brought along a few substitutes."

She noticed the four ragged kids for the first time.

"What a splendid idea, Michael! Come in, boys."

They followed the man in, shy and ill at ease.

"Now don't you fellows get me wrong," Diston said. "I'm not trying to reform you. If you don't want to do what I suggest, it's okay with me. But in case you *do* want to wash up a little, there's a place down the hall."

He looked at Kel, whom he had recognized as the leader when it came to such delicate questions as this. If Kel could wash without being a sissy, there was no question about the others.

"I ain't scared of water," Kel said indifferently.

When they finally returned from the bathroom, Mrs. Diston beamed at them.

"I know it isn't polite to ask you to eat almost the moment you come in," she said apologetically, "but Michael is late and dinner has been waiting. Do you mind very much?"

They minded so little that they almost literally plunged into the soup. It was Venusian dorka broth. The kids had never tasted anything like it before, not even the canned mock-dorka. The first mouthful was enough to tell them the difference between this and the stuff they had been fed at the Martian Rescue Home. The soup went down their throats so rapidly that Mrs. Diston blinked in amazement.

After the soup came turkey. Buck had once got within tasting distance of a chicken, but none of the others had ever seen such animals. Until the first mouthful they viewed the huge stuffed bird with suspicion. But that first mouthful convinced them.

Michael Diston, sitting back and eating at a more leisurely pace, caught his mother's eye and smiled.

The desserts, of home-grown Martian fruit, stewed and spiced with meldayo seeds, needed a little more room than was left. But all four stubbornly pushed some down their throats. Then they sat there at the table, hardly able to move, their eyes glazing.

"What's the matter, Buck—sleepy?" Michael Diston asked.

Buck Henry nodded, his eyes half-closing. He looked more like a cherub than ever, now that he was so bloated.

"It isn't the best thing for you to go to sleep now," Diston told him. "Not on a stomach as full as yours is. Do you think you can manage to stay up for an hour?"

"Sure," Mr. Diston."

"I'll try to keep you entertained. What's your sister like, Buck?"

THE kid no longer the tough guy of a couple of hours before. If the same question had been asked him then, he would have piped indignantly that he paid no attention to girls. Now he simply related what went on in the little hovel he called a home.

His mother was sick of Martian fever, the chronic so-called benign variety, which prostrates but does not kill. It had supposedly been eliminated from Mars five years back. The authorities had prided themselves complacently on its absence, until a few suspicious doctors had discovered it masquerading under half a dozen other names.

His father had died in a cave-in of a jornallite mine. That, in a way, had been fortunate. The man's lungs had already been half-eaten away by the radioactive jornallite particles and he had been sure to die, anyway. And because of the cave-in, his family had been paid five hundred Martian renni, instead of nothing. It had kept them going for almost a year.

His sister, aged fourteen, had stopped going to school on the pretense that she was two years older. There were two other kids to take care of, besides Buck. She cleverly brought home bundles of Jovian reed-grass, and for amusement the whole family wove the grass into baskets. They received one-tenth of a Martian ren per basket.

"You certainly don't have it easy, Buck," Diston said. "What about you, Skinny?"

"Reskeel," Skinny grunted.

"Your dad won't leave it alone?"

"It ain't his fault," defended Skinny. "He was a big shot once. Then he got into a fight with somebody who was even a bigger shot."

"What was the fight about?"

"I don't know. I was just a kid at the time."

Diston looked at the youngster and repressed a smile.

"Don't you get to thinkin' that the old man's a total wreck," Skinny warned. "Sometimes he starts spoutin' the stuff he used to know and it's enough to knock your ears off. He was Honor man in his class at Lunar Tech."

"Why doesn't he climb back where he used to be?" Michael Diston asked, impressed.

"It's easier to drink reskeel and bum around. Besides, the old lady died a long time ago and he don't give a hang no more. If she had stayed alive—"

Diston nodded, his eyes softening.

"You guys got a lot of trouble over nothin'," Monk said in his uncertain baritone. "Me, I got it easy. No old man, no old lady. I do what I want. When I grow up I'm gonna hunt eight-footed horses on Mercury. The heat don't mean nothin' to me. I'm tough. I'm gonna do everything."

"When you grow up, eh?"

"Just a couple of years more," said Monk casually.

"Where do you live?"

"With my uncle. When he gets to be a pain in the neck I move out on him to see a cousin of mine. They think because they give me a piece of floor to sleep on, they can walk all over me. But they got another think comin'."

"I could see right away that you're not the kind anybody could step on," agreed Diston. "What about you, Kel?"

KEL'S mouth tightened. "His old man was some guy!" enthused Buck. "A pirate! Remember that fellow, Lareda, who got robbed?"

"You were hardly born then, old-timer."

"Yeah, but I heard. Kel's old man was the Black Pirate!"

"Shut up, dope!" Kel snarled. "Mr. Diston don't wanta hear about that."

"Not unless you care to talk about it. Why did your father become a pirate, Kel?"

"Couldn't get a job and the old lady kept naggin' him about it. Said it was because he was a native Martian and lazy. Said she married beneath her. So he got sore and said he'd show her if he was lazy."

"He showed her," Buck half-asleep, added proudly. "He had every space ship in the System scared of him before he kicked the bucket. Kel's mother says he got killed in an accident when Kel was a little kid. He was just too tough for the cops."

"I've heard he was tough," admitted Diston.

He looked at the four of them. They had been speaking quietly, without anger. Now that their stomachs were full, they were ready to go to sleep. He sighed.

"You kids never had a chance. I guess I didn't have the right to go poking my nose into your business, but I felt that I'd like to know. My own life has been pretty easy. I've always had a roof over my head and I've always known there was another meal coming. Usually I've been able to guess what it would be, too. And when I applied to the Interplanetary Police school and got in—well, from then on my life was laid out for me."

"I don't want to be no cop," stated Kel flatly.

"Very few people do."

"Cops are rats, except you, Mr. Diston."

"I'm the Black Pirate," Buck muttered sleepily. "Ahoy, there, skipper! Cut your rockets, or I'll blast you. I'll have some of that cargo. Saturnian vindemar, worth ten thousand renni a gram, and you got a hundred kilograms. Oh, you won't stop, huh? Give 'em the ray gun, boys. *Zzzzzzzzzz*!"

"Hey, look!" Kel suddenly shouted. "Outside!"

"What is it, child?" Mrs. Diston asked anxiously.

"The world's screwy! It's snowin'!"

They rushed to the window to watch. Even the somnolent Buck opened his eyes wide.

"Look at them flakes!" Skinny said with awe. "They're as big—as big—"

Words temporarily failed him, but Kel completed the sentence.

"They're big like potato chips!"

"It can't be true, because it practically never snows on this part of Mars," Buck said. "I remember my teacher said there's been no snow around here for more than a hundred years and what there is comes in winter. I guess there's somethin' wrong with our eyes. We ate too much."

"You and your teacher!" sneered Kel. "She can make a mistake, too, once in awhile. I'm tellin' you, those flakes are like potato chips, the kind they import from Earth. It costs three renni for a little box."

"I remember that on Earth it almost always snowed at Christmas time," Mrs. Diston said placidly. "Christmas Eve without snow just wasn't Christmas."

"My teacher says—" Buck insisted, and then stopped.

HIS eyes followed the snowflakes as they fell slowly to the ground. There was a noise. They all looked up. It was coming from the chimney, a purely ornamental part of the house, built by sentimentalists who wanted to duplicate their old homes on Earth.

A pair of red-clothed legs became visible, then the edge of a scarlet coat. Finally there appeared a stout, ruddy gentleman with a sack slung over his back.

"Merry Christmas," he said jovially. "Merry Christmas on Mars. And may there be peace on Mars and Earth, and every other planet, and good will to men."

A ruler, thought Michael Diston, slid down the front of the faces of those four kids, would have separated the eyes cleanly from the rest of the features. The eyes were sticking out that far. Kel was the first to recover.

"Aw, it's Mr. Diston," he grumbled.

They swung around. Michael Diston, standing to one side, was regarding the red-coated figure with as much surprise as any of the rest of them.

"Merry Christmas, Santa," he said.

"It's his brother," Monk suggested.

Mrs. Diston shook her head.

"Michael has no brother. And it isn't one of the neighbors, because they're busy with their own Christmas trees."

"Christmas trees?" asked Kel. "What are they?"

"There's one in the next room," replied Michael Diston. "You might

go in and take a look at it."

Before he had finished his sentence, they had rushed into the next room.

"I was in here before," Kel said, "but there wasn't no tree."

There certainly was one now, though. No pine or fir trees could grow on Mars, and freight charges between Earth and Mars were too high for people to transport them here. But the kids were not familiar enough with plastic materials to recognize anything artificial in the imitation fir that now stood before them. To them it was a real Christmas tree, the first they had ever seen. They gazed at it in awe.

It was covered with tinsel and small colored lights, in the tradition of Christmas trees on Earth and Mars. On the branches were packages that sparkled in their wrappings of luminescent plastic.

Santa Claus strode over to the tree.

"Here's something for a fellow by the name of Monk Smith," he said. "Anybody by that name around here? You, young fellow with the deep voice? How do you spell it?"

He paused, listened attentively.

"S-m-i-t-h seems to be about right." He shook the package. "Might be a mouth organ in here, one of the kind that can sound like either a violin or a trumpet when you press the right button. Oh, you like drums? Well, I think that if you bang on the hollow end with the stick that's inside, you'll hear something that might be a bass drum. Now don't ask me how I knew you liked music. I get around and I hear things. This little toy is practically a whole orchestra in itself."

MONK clutched the package as if he were afraid some one might take it away.

"Is there a chap by the name of Buck Henry hanging around? He might be interested in this package here. Looks like a set of adventure stories, all written on a set of films. How many of them? Well, maybe a hundred.

"And the projector that goes with the films is right there, along with a high-powered battery good for a few thousand hours of light."

Buck Henry snatched his gift. He knew that only sissies liked going to school, that no he-man would be caught dead opening a book he wasn't forced to open. All the same, books fascinated him, and Santa Claus somehow had discovered that fact.

Skinny McCoy was next. Skinny liked to draw things whenever he could find the pencil and paper he needed. From now on he would have no trouble finding them. There was a drawing board, paper and a set of paints that would have gladdened the heart of an older artist.

"Kel Ankar," said Santa Claus. Kel stepped forward. "You were a real problem. You don't go around saying much about the things you want. I had to listen to you a whole Martian year, before I had an idea of the gift that would suit you. But I don't think I've made a mistake. You like to do things, eh? You'd like to be a chemist or an engineer. Am I right?"

"Atomic chemist," Kel admitted.

"Then I guessed that one right, sure enough. There's a chemical set in here that'll teach you lots of things. There's even an experiment or two on induced radioactivity. It can be just a little dangerous, though, if you're careless or stupid."

"I won't be!"

"I didn't think you would. Well, here it is. Next year I'll come back and see what use you made of it."

He slung the sack over his shoulder and returned to the chimney.

"Mister—Santa!" Kel called after him suddenly.

"What is it, son?"

"You forgot Mrs. Diston and Mr. Diston."

"No, I didn't, Kel. Their presents are here, but I don't think they want you to know what they are."

"Oh. Well, thanks, mister."

"Don't mention it, Kel."

He rose slowly up the chimney. They watched in silence as his legs disappeared. A moment later they heard him tramping across the roof. Then came a faint cry:

"Hey, Donner! Hey—"

He was gone. The enormous flakes

of snow were still drifting down outside, blotting out the landscape.

"It's bedtime, boys, and I'm tired," Michael Diston said. "So, if you don't mind, I'll show you where you're going to sleep."

They followed him upstairs without a word.

WHEN he came down a moment later, his mother asked:

"Are they in bed already, Michael?"

"They didn't even take off their clothes. I guess they aren't in the habit. I covered them up and they were asleep almost before I turned around to leave."

"It was a wonderful idea, bringing them here."

"There wasn't much else I could do. They tried to hold me up."

"Those children?" she blurted out incredulously.

"Those children can be pretty tough." He frowned. "I have to leave Mars tomorrow, Mother. I had a long trip getting here, and it will be even longer returning to Jupiter. But after I go, there will be some things that'll have to be done. I'm wondering if it would be asking too much—"

"I'd love to, Michael," she interrupted.

"I suppose you know what I mean."

"I do. Buck's sister, by his account of her, seems to be a self-reliant sort of girl and shouldn't be difficult to help. As for Monk, I believe I know just the couple. They lost their own son last year, when that ship from Venus was wrecked. They'll be glad to have him. And if they're not, I shall certainly be."

"You'll have to find a job for Skinny's father."

She nodded thoughtfully. "Jobs are scarce now, but I think I'll be able to manage. Anything else?"

"Kel is the big problem. I don't want him growing up with the supposedly heroic image of his father constantly in front of him."

"I know just the right school for him. He needs a place that'll keep him busy and make him forget the false glamor of a career of crime. I'll look out for him."

Diston's face relaxed. "Then that takes care of everything."

"All but your present, Michael."

He smiled. "I have an idea that Santa Claus knew you were the best present I could have. And since I see you only once a year, he was right."

"And you're all the present a mother could ask," she said softly.

"I'm a poor thing to offer you, but I suppose I'll have to do."

Outside the flakes were still coming down, but more slowly now.

"All I had to do was push a button," he said. "The apparatus for making those flakes is still on the roof from last year. It's lucky I never took it down."

"However did you manage Santa Claus?"

He laughed. "I'm almost ashamed of you for not guessing. Don't you remember Oliver, the robot servant I bought you last year?"

"Of course, how stupid of me!"

"All I did was dress him in a scarlet suit and pad his stomach a bit. You didn't use him because you complained that he got in your way. The real reason, of course, is that you were so old-fashioned, you liked to do things for yourself. At any rate, Oliver is still practically as good as new. You'll have to try him, now that you see how handy he can be."

SHE nodded, then frowned in bewilderment. "The presents!" she asked. "Where did you get those?"

"Things I brought along to give our neighbors' kids." He grimaced. "Those little brats get more toys than is good for them and they can struggle along without a few presents this year. I found out during dinner and after what these kids wanted, and I did as good a job of allotting as I could."

"But I don't see how Oliver could speak."

"He can't, without assistance. But he has a speaker system inside him, so he can act as a butler and answer the door. I had a little sending set right up my sleeve. After all, a much worse ventriloquist than I am would have got away with it. Those kids were so

impressed at seeing Santa Claus, they hardly cast a glance my way."

She kissed him.

"I'm tired, Michael. I'm going to bed. I'll see you tomorrow before you go."

"Sure thing, Mother. I'm going to stay up a few minutes and listen to the news."

His eyes followed her as she slowly climbed up the old staircase. Then his finger touched a button on the televisor. The voice of the news announcer came to his ears, while the man's face faded in slowly.

"London, Earth. It is reported unofficially, but from sources hitherto found to be reliable—"

There was a rumor of war. There was a rumor of peace. There was news of an earthquake on Venus, of the collapse of a source of volcanic power on Pluto. Michael Diston listened drowsily.

"Jupiter City, Jupiter." He sat up, suddenly alert. "The police announce that the last remnants of the Black Pirate's old gang were hunted down and finally wiped out last week by an Interplanetary Patrol headed by Michael Diston, ace interworld detective. Like the Black Pirate himself, the members of his gang were all pure-blooded Martians.

"The Black Pirate's real name, it may be remembered, was Gars Ankar. His wife was of Earth and he left a son, Kel. He was himself killed several Earth years ago, following a daring jewel robbery, of which William Lareda was the victim. He was blown up and his space ship destroyed in a hand-to-hand struggle with Michael Diston. Now, through Diston's heroic efforts, the entire gang—the last important pirate crew to menace the space lanes, has been destroyed. Interplanetary commerce can expand now as never before, released from the threat of piracy."

HEADLINERS IN THE NEXT ISSUE

WHAT really is the mystery of the queer pyramids that the Binder heroes have been encountering on Mars and Venus and Mercury? At long last the "Via" boys pierce this age-old interplanetary secret in Eando Binder's smashing, complete novel—VIA JUPITER. Imagine the density and mass of this hugest child of the Solar family, rolling along majestically through space, capturing a veritable train of asteroids and minor worlds for satellites by its sheer gravitational attraction which permits nothing to escape.

Two men of courage and daring, because the need of the expedition was so urgent and great, venture forth from one of Jupiter's moons and deliberately permit themselves to be trapped by the mother planet in order to find a certain metal which the expedition had to have. Knowing that the chances were a thousand to one against their being able to escape the attraction of Jupiter, these heroes find the metal they seek, more of the mysterious pyramids—and manage to escape. Don't miss VIA JUPITER, whatever you do.

* * * * *

ON DECK of the finest spatial ship ever to cruise the void, a tourist vessel de luxe whose majesty and appointments dwarf even the breath-taking magnitude of today's clipper airships, the first officer is discontented. He heads into a mess of trouble because he doesn't like to play nursemaid to the idle rich voyagers who ride the LUXURY LINER and travel around to sightsee the worlds. Nelson S. Bond does a good job of pleasure cruising through space.

* * * * *

NEXT on tap is number two of Ray Cummings' fascinating trilogy on the fall and rise of man in the day of the robots. In this yarn the son of the hero of DECADENCE carries on the torch of liberty and of regeneration. Follow through this epic series with the pursuit of the FUGITIVE.

* * * * *

D. D. SHARP always provides a swell treat in the realm of science. And we're not fooling! We'll have a D. D. Sharp yarn next issue—and it will be sharp stuff!

* * * * *

EVERY reader has become a rooter for Frank Belknap Long's botanical stories. These promise to get better and better as they go along. Watch for the next adventure of John Carstairs, botanical detective of the future—coming soon!

* * * * *

REGARDING the rest of the next issue, there will be other stories, properly selected for length and balance. And don't forget the various departments scattered through each issue. Thank you!

SNAPDRAGON

By FRANK BELKNAP LONG

Author of "Two Against Neptune," "Plants Must Grow," etc.

With a sudden leap the plant dragon grabbed a voluminous trouser leg

When Scientific Murder Won't Out, the Botanist Detective Uses Future Biology to Plant the Guilt on a Shrewd Killer!

HIGH in the stratosphere above Third-level New York four alert, spare-framed men stood in the control room of an ascending helicopter. They watched a tiny figure clad in athletic shorts, twenty-two miles beneath them.

The figure was playing badminton on a white, sun-drenched court. A wiry minikin apparently six inches tall on the helicopter's amplifying conning plate, he seems to be swatting dust motes with a microscopic racket.

On both sides of the plate, Third-level New York shaded off to a gray opacity. Only the tiny patch occupied

by the badminton courts had been brought into sharp, stereoscopic focus on the most powerful telescopic screen ever welded into the visiport of a helicopter.

The minikin was approaching the net now, his racket swinging. He was a good badminton player and more than a match for his opponent, who was sweating from every pore.

Suddenly, as the four navigators stared, the little figure bent, picked up a dust mote and swung at it with a downward sweep of his racket. There was a tiny flare, evanescent as a millivolt jarred loose from a phantom circuit, sparking out in bright sunlight.

The minikin's yellow athletic shirt turned crimson. Dropping his racket, he clutched at his chest and slumped down on the white court, which instantly darkened about him.

One of the navigators raised pale-blue eyes and glanced at his companions across the conning plate.

"Stand ready to blast," he said.

Far beneath, on the sun-drenched court, the minikin arched his body convulsively, stiffened and lay still.

VERA DORN was sitting before her typewriter, cataloguing spores labeled "Perennials, Neptune" on a buff-colored filing card. John Carstairs came striding into the office, his shoulders squared and an expression of Scotch enthusiasm on his face.

"Good morning, *Mr.* Carstairs," Vera said.

The Curator of the Interplanetary Botanical Gardens parked himself on the edge of his secretary's desk, crossed his long legs and fumbled in his vest for a cigarette.

"I have a feeling we'll work through to the epiphytes this morning," he said.

She raised her head and stared at him scornfully, her fingers relaxing on the keys.

"I have an exactly opposite feeling," she retorted. "How can I drive myself when I can't catch up on my sleep? Every night for the past month I've been dreaming about you. In my dreams you're a new kind of detective. Instead of behaving like a curator, you keep walking around in circles, disguised as a plant."

"Oh?" Carstairs inquired politely.

"Yes, oh! You have an electron-glass in one hand and an audio-visiphone strapped to your chest. While you are peering through the electron-glass at Sloppy Joe spores from Pluto, magnified fifty million times, you keep insulting Inspector McGuire in the audio-visiphone."

"You mean to say—"

"Let me finish. The dream always ends the same way. The electron-glass heats up and the microspores explode in your face. It's gruesome! One minute you have a face, and then —then I wake up."

She took a deep breath.

"John, when will you stop trying to cure McGuire's headaches? If I were a young man and curator of the finest botanical exhibit in the Solar System, I'd try to deserve my good luck. Instead of helping the police clamp down on slimy criminals, I'd devote all my energies to making the Gardens safe for visitors."

"Safe? They are safe, Vera."

"I mean safe and stimulating. When tired office workers come up here to get away from the daily grind, what do we show them? Safe plants, Terrestrial plants. A few rare and gorgeous blooms, perhaps, like the dwarf Gianiranium from Eros and the perennial klings, a few hideous plants labeled 'Not for Children.'

"And the Marine Stove. It's a fascinating walk around the first time, for people who have never before seen the ripening buds of a Saturnian sea-fan, or the epiphytal snake-weeds of the Titanian tidal basins. But I've noticed that half the people who go into the Marine Stove come out again in eight minutes flat. It's wonderful, sure, but so is the Moon. And when you've seen both hundreds of times—"

"You mean I'm not a good curator?"

"I didn't say that. You're good, but you ought to surpass yourself. Our field men risk life and limb collecting splendid, dangerous plants from all over the System. You let them down

by going around in a daze and blushing like a school kid when McGuire calls you a detective. If I were in your shoes I'd devise some all-out safeguards, so that even explosive plants could be displayed in damp summer weather."

CARSTAIRS regarded his secretary with somber disapproval. She seemed to be really angry now, this girl who had wangled a job from him on the strength of a few years spent in a blue-stocking university. Miss Vera Dorn, Ph.D., Botanist Extraordinary.

He had to admit that she was attractive, largely because her coppery hair coiled in little ringlets about the nape of her neck, and her blue eyes held unfathomable glints. But her logic got under his skin and made him feel uncomfortable right down to his soles. He regretted that he had not fallen in love with a Uranian plant gal.

"Maybe I should be out the next time the inspector phones," he said.

Before Vera Dorn could reply, the audio-visiphone at her elbow buzzed restrainedly.

"By golly!" Carstairs muttered, reaching across the desk.

The inspector's face on the opalescent screen seemed to clear his conscience. The unwholesome conviction that he had been neglecting his work suddenly vanished. It was replaced by a vision of struggling, shouting men, atomatic pistols leaping in bright sunlight and the inspector shouting above the din:

"Carstairs, you ought to be on the force! You've got what it takes!"

This time McGuire's face was all hollows and gleaming sweat.

"Carstairs, I don't know why I'm buzzing you when I've got men here I can *depend* on. I must be getting senile."

"You're in a hole, eh? You want me to lift you out."

"Well, not exactly."

"All right, it's grand weather we're having. So nice of you to have imaged in."

Carstairs made a movement to replace the reception disk.

"Okay, hold it." McGuire grunted frantically. "I need you and your bloody plants. I haven't time to argue. I'm going to flash you two images. The first will show you the badminton courts on East Thirty-eighth Street, Third-level Manhattan. I'll image the second at twenty feet, so you can see all the gruesome details.

"What *is* this?" asked Vera Dorn, straightening.

"I think he's going to show me a corpse," replied Carstairs, smiling uncertainly at her over the audio-visi-disk.

Vera rose angrily and leaned across the desk. "Inspector, go away," she said. "We don't feel like a murder this morning."

McGuire scowled. "Call her off, Carstairs. I've got all the wildcats I can handle at this end."

Carstairs took her by the shoulders and twisted her around.

"Go back to your typing," he ordered. "The stags have it."

Vera sat down and glared at him.

"Remember, I warned you. The directors will give you the sack."

"All right, Inspector," Carstairs said. "Step back and let's have Number One."

The inspector vanished. In the disk on Carstair's palm appeared a high, white grandstand filled with milling spectators. Police officers in uniform had been posted at intervals along the base of the tiers, which were divided vertically into wedge-shaped blocks by narrow ramps. Sunlight poured down over the abandoned courts, cascading in ruddy curlicues over discarded shuttlecocks and rackets and glinting off the red pool.

THE pool of blood was near the center of Court 3, a crimson splotch on white plastic, faceted by net-cast shadows. It looked like an enormous, compound eye glaring up into the roving audiovisual screen.

Carstairs sucked in his breath sharply. He'd never liked splotches of that color, all glistening and wet. Badminton was supposed to be a gentle sport, yet someone with a preference for sudden death had changed it

into a bloody game of murder.

The reception disk began to glow again, and the courts faded out. On the screen appeared a rigid, small form covered by a sheet. Into the disk crept Inspector McGuire's strong, hairy hand. It pulled back the sheet and a twisted, yellow countenance came into view.

What horrified Carstairs most was the dead man's uneven teeth, which were fully exposed, and the way his eyeballs protruded. His hair was matted and there was a sardonic grin on his lips.

McGuire's square-jawed face reappeared on the screen.

"Did you recognize him, Carstairs?"

The curator nodded grimly. "I've seen him alive."

"Then I don't have to tell you how serious this is. The Gobi Republic has been dickering with the State Department over some juicy territorial plums in the Asteroid Belt. Just to prove he's a regular guy, the Gobi envoy challenges our badminton experts to a little game. While Congress is debating his proposition, Lee Chun is right here in my district, swinging a racket.

"One of the feathered darts goes up into the grandstand and somebody throws it back. Lee Chun picks it up, swings at it, and—it explodes like one of your detonating killer plants. I could have drawn the sheet back to his chest, but your secretary thinks you should be shielded from things like that."

"You mean the shuttlecock was tampered with?"

"Carstairs, you're a mental giant. While the dart was up in the grandstand, someone who dislikes the Gobi envoy removed one of the feathers and inserted a plug of dried diazo compound, which blew a hole right through Lee Chun. He took a chance in throwing it back, of course. It might have exploded when it hit the court. But diazo compound is funny that way. What it really resents is a hard smack."

Carstairs' eyes had begun to shine. He wasn't callous or insensitive, but the detective in him was calling Dr. Watson for the needle.

"How many spectators?" he asked.

"You saw them. Three hundred, three hundred and fifty, perhaps. I can keep them bottled up for a week, if necessary, but Washington will be down on my neck. The whole Gobi delegation turned out to watch Lee Chun play!"

"I see. Before you have to serve them champagne cocktails, you're hoping I can weed out the killer for you."

"Well, can you?"

"Inspector, we're going into action with a weeder-outer that came all the way from Pluto in a sterile herbarium. Just pour yourself a stiff one and relax."

Carstairs hung up, glanced first at his watch and then at Vera Dorn.

"Okay, you can go to lunch," he said.

She shook her head. "No, you don't pal. I'm filing your clever little scheme for getting me out of the way with the dry rot moss from Neptune, which never stops shrinking. And confidentially your scheme shrinks."

"Now, Vera, look. I'm going down into the cool cellar and dig up some fat, slimy slugs from sphagnum compost. Plutonian fume slugs. They're nasty to look at and you know what happens when you get a whiff of the fumes."

"You mean I tell all?"

"If you have nothing in your past you're ashamed of, okay. But I wouldn't want a whiff in your presence."

"You know darned well you're going to clamp a filter over your nose while you're digging them out," she said. "I'll wear a filter, too."

FIFTEEN minutes later Vera Dorn was kneeling at Carstairs's side on a cold slate floor thirty feet under the Administration Building, a Varbar fume filter strapped to her nose. The cool cellar was thirty feet square. It had a low ceiling and was illuminated by cold light bulbs set at intervals around walls that were coated with gleaming hoar frost.

Carstairs was digging with an alu-

minum trowel in a sliding tray of sphagnum compost, which he had withdrawn from a storage refrigerator. He carefully unearthed three long, mottled slugs with rudimentary shells. Horned and repulsive, they differed from Terrestrial garden slugs in only one important particular. They were not animals at all, but plants which reproduced by budding and absorbed nourishment by osmosis from nitrous soil.

He was holding a small, glistening needle in his left hand. He waited until he had unearthed six slugs before he began puncturing them, giving them abrupt jabs that made the girl wince.

The first slug produced no fumes. It merely gave a shrill, tiny scream, such as the caterpillar of the Death Head Moth is said to emit when attacked by surprise.

"Not ripe," Carstairs granted.

"I don't understand yet why the fumes make people want to tell all," she complained.

"It's really quite simple. The slug stores up a chemical truth fume. When it ripens, it wants to be left alone, so it throws off the fumes as a defensive smoke screen. Its natural enemy on Pluto is the beaked tripper plant. When I stick a slug with this needle, it thinks the tripper plant is attacking it, and we get the smoke screen."

"But I still don't see—"

"We've never been able to produce a truth chemical synthetically, but we have something pretty close to it. When people breathe air impregnated with carbon disulfide, they babble and scream and sometimes come pretty close to telling all. Carbon disulfide causes epidemic hysteria, you see."

He pricked another slug and frowned.

"We haven't yet been able to break down the molecular structure of the chemical which the slug secretes, but it really does the business. It makes people eager to answer questions which they would ordinarily resent. Of course the slug doesn't know that. The fumes which it uses to conceal itself from the tripper plant just happen to affect human beings in that way."

The fifth slug appeared to be ripe. As soon as the needle touched it, a thin, bluish vapor swirled up and spread out around them, enveloping their shoulders in a nebulous haze.

"A very little of this stuff in the atmosphere could drug a thousand people," Carstairs explained.

"I'm beginning to get it," she said. "McGuire has some suspects you're going to third-degree by giving them a Plutonian truth treatment."

Without replying, Carstairs tested the sixth slug.

WHEN he awoke, he was lying flat on his back on the floor and Vera Dorn was bending over him.

"How do you feel now?" she asked.

Carstairs groaned and sat up.

"Rotten. I wish you were out of my life. You hear? Out of my life. I can't stand the sight of you!"

All the blood drained from her face.

"John, you—do you really *mean* that?"

You bet I mean it. Go away! Don't touch me."

Vera Dorn stood up, her eyes burning above the rim of her fume filter.

"I thought you were in love with me."

"Of course I'm in love with you, but I hate you, too. All men hate the things they love."

"*Things?* Oh, John!"

"I mean not only women, but everything that makes life worth living—science, art, sunsets, children, great music, detective murder stories."

"The drug is making you talk like that," she whispered.

"I'm simply telling the truth. Psychologists call the emotional wavering between the love and hate impulse *ambivalence*. To be brutally frank, right now I hate you."

Vera was getting her color back. Her eyes flashed and her chin went up. With an abrupt, angry movement she tore the fume filter from her nose.

When she readjusted the filter, she was reeling. For a moment Carstairs thought her eyes would spill over.

"Darling, I didn't mean what I said."

She fell to her knees beside him.

"Now I'll tell *you* something, John Carstairs," she sobbed. "Right now I could scratch your eyes out. But would you mind terribly if I kissed you instead?"

"No," he said. "I wouldn't mind at all."

"Then why are you staring at me like that?"

"I'm sorry. Do you want the truth?"

"Of course."

"You've been eating onions."

TRAVELING to Manhattan in the Second-level Tube, Vera Dorn sat by Carstairs' side with a wicked glint in her eyes, not speaking at all. The fumes had worn off, but Carstairs was laden down with botanical oddities. The gyro express deposited them at East Horatio Street. In morbid silence she accompanied him across a long platform and up to the Third Level.

They were just in time to catch the northbound eight-mile-an-hour transportation strip, which was crowded with mechanics and engineers hastening to work.

Carstairs selected a seat at the edge of the strip and crossed his long legs.

"You may as well sit down," he said. "We've got a tough day ahead of us."

Vera ignored him by clinging to a strap and glancing sideways into the viewcator of an elderly passenger. Clicking through the viewcator was a newsfilm which did not interest her at all, but neither did Carstairs interest her—she kept telling herself over and over.

The badminton stadium was wedged between two enormous power plants three thousand feet above the darkly swirling waters of the East River. A recreational oasis in Scotland, it had been erected in 1994 by the playboy mayor, Thomas Brundage, as a vote-getting experiment.

Carstairs and Vera bore down on it from the intercity transportation ramp.

A six-foot police officer, with a positron rod dangling from his belt, slipped out from the cordon which encircled the building. He came striding belligerently toward them, his Irish jaw outthrust.

"This entrance is closed, buddy," he rasped. "You've got to go back and around."

Annoyed, Carstairs displayed his police card.

"Take me to Inspector McGuire," he rapped.

"Yes, sir," the big man apologized. "Just follow me. I had orders to admit you, but I didn't think—"

"He didn't think you looked like a detective," whispered Vera scornfully.

A few minutes later Carstairs and Vera Dorn stood in a white-walled cubicle under the grandstand, staring over Inspector McGuire's shoulder at a palely flickering audio-visiscreen. McGuire was sitting on a low stone bench, his shoulders hunched forward, his close-cropped head aureoled in cold light.

The cubicle had been designed to serve as a shower alcove for perspiring badminton players, but McGuire had requisitioned it for purposes of his own. Fortunately there was a direct audio-visual hookup between the grandstand and the cubicle. McGuire had been spared the labor of installing a disk.

In the receptor screen the east gate of the stadium stood out luminously. Singly and in twos, garrulous, gesticulating spectators were passing between the turnstiles. They were prodded forward by police officers in uniform with fume-filters masking their aggressive jaws.

"You did it, eh?" they demanded. "You put diazo compound into that shuttlecock!"

BEING questioned in this rapid sequence were some weirdly contrasting types—a frail, white-haired woman who looked like somebody's grandmother, a slant-eyed Oriental, a schoolgirl in her 'teens, a gold-braided member of the Diplomatic Corps, a burly citizen with cauliflower ears, a gray-suited, refined-looking gentleman carrying a briefcase and dozens of others.

"I've got to give you credit, Carstairs," growled McGuire. "If someone told me you could needle two little pipsqueaky plant slugs and fill the grandstand with truth fumes, I'd have called him a liar to his face."

"Listen!" the curator said abruptly.

Wedged in the turnstile was a portly individual with shoe-button eyes and rolls of fat on his face.

"Good riddance, if you ask me!" he bellowed. "It's about time Congress stopped lettin' them slant-eyed babies bulldoze us out of our asteroidal rights.

"You killed him, eh?" demanded a cop.

"What if I did? He got what was coming to him."

"All right, step through," the cop said disgustedly. "Murphy, here's another guy who's confessed. Lock him up."

"That's the tenth so far!" McGuire groaned.

"I know," said Carstairs, "but we're weeding them out. We're bound to get confessions inspired by malice and spite. This man obviously hates all Orientals. The asteroidal belt is wide enough for all races, if you ask me."

"I'm not interested in your political views, Carstairs. I'm simply pointing out that your slugs haven't got what it takes."

"You better brush up on your psychology, Inspector. They all *think* they're telling the truth, but the human mind is as devious as a nest of caterpillars. You've got to remember—"

"Listen," Vera interrupted.

In the turnstile now was a young man who looked like a Greek god at the dawn of the world. His head was a great, tumbled mass of gold, and he was wearing a sport shirt that was open at the throat.

"I'm John Newton," he said coldly.

"That don't cut no ice here, buddy," snarled the cops. "Why did you kill him?"

"You've never head of John Newton? I'm the greastest poet in the world today. Fifty years from now you'll erect a statue to me."

McGuire made a descriptive movement with his forefinger close to his forehead and barked into the audio-visiscreen:

"Hold him. There ain't a crime in the calendar a guy that crazy might not commit."

A woman with a hard, brittle face was halted next. She glared at the officers on both sides of the turnstile.

"All right, I killed him," she shrilled. "So what?"

"Why did you do it?"

"I says to him: 'Mister, I ain't dancing with the likes of you. There is a hall down in Chinatown, Second Level, where you can dance with one of them geisha girls, if you're so minded."

"Hold her," McGuire groaned.

"She felt insulted when Lee Chun asked her to dance, and brooded over it," Carstairs explained. "She's getting back at him by confessing to a crime she didn't commit. Just a taxi dancehall girl with a neurosis.

"Just the same, I'm holding her," defied McGuire.

CARSTAIRS glanced down at his waist.

"It's a good thing I've got all the answers right here on my person," he said. "You'd have one sweet time breaking those neurotics down."

McGuire swung about and stared petulantly at the curving, clouded-glass herbarium which encircled Carstairs' waist.

"What the blazes have you got in there?"

"You'd be surprised."

"Carstairs, it's too bad you haven't a plant down at the Gardens that doesn't like you personally. I mean a plant capable of holding a grudge, a plant that could feel the same way about you that these people feel about Lee Chun. A big, ferocious plant that wouldn't have to smell the blood of a Chinaman to get its dander up."

"Inspector, you'd be the first to grieve if I were ingested by a plant."

"I'm not so sure," McGuire rasped.

Two more confessions were extracted before he turned back to the screen. A slender, hawk-faced man with a sun-visior was declaring belligerently:

"I won't answer that till I've seen a lawyer. I know my rights."

"Murphy, lock him up!" shouted the inspector.

"I you do, I'll sue the city."

"A strong-willed laddie," mused Carstairs. "He's fighting the drug."

A dapper little man with an abbreviated mustache appeared on the screen.

"I'm a research chemist," he said apologetically. "Naturally you'll suspect me."

"Naturally. Lock him up."

"Say, look here now! You can't—"

"Lock him up," repeated McGuire with murderous calm.

A middle-aged woman dragging a child by the arm flared when questioned:

"The only man I ever wanted to kill was my second husband. Let me out of here!"

It took the two officers a solid hour to clear the stadium. McGuire's face was a lake of perspiration when Murphy announced:

"We've got fifteen suspects, sir. Six wouldn't answer questions. Four had access to explosives, like that chemist. One was a poet. The rest made screwball confessions. Inspector, they are all talking at once, telling *all!* When I go home tonight, I'm gonna dust off my halo and wear it to bed."

"All right, keep them in line," McGuire rapped. "I'm coming up."

Five minutes later McGuire, Carstairs and Vera Dorn stood in a large, vaultlike room, staring across a circular metal table at the suspects. The room had been hastily evacuated by the New York State Badminton Committee. The table was still littered with official score sheets, dot-dash pencils and cigarette butts.

The prisoners had stopped confessing. The man who had threatened to sue the city was muttering under his breath. The dapper little chemist was indulging in picturesque profanity. The poet was staring down at his shoes, his features twitching. The brittle-faced girl was glaring sullenly at the two police officers, as though contemplating first-degree assault.

Several of the women seemed more stunned than resentful. The youngest, a wasp-waisted girl of perhaps nineteen, was puffing on a cigarette and staring without animosity around the big, blank-walled room.

"I'M sorry I had to hold you people," McGuire said tersely, "but you asked for it."

"I must have had a sunstroke," mumbled the beady-eyed fat man. "I can't remember."

"It was like a nightmare," one of the women moaned.

"Silence, all of you!" McGuire ordered. He turned to Carstairs. "All right, take over."

Carstairs nodded. "I guess you know by this time, Inspector, that nearly all of our weirder perambulating plants look like Terrestrial animals. If we had crawling, leaping plants on Earth, they would look like animals. Nature must adhere to very definite patterns if she is to achieve functional—"

"Cut that out, Carstairs! You're not in a classroom now."

"All right, but I want you to get it firmly planted in your mind that Snapdragon is a plant."

"Snapdragon?" echoed McGuire, blinking.

"Not the familiar garden perennial, Inspector, but a *real* snapdragon—from Callisto."

Carstairs' hand went into the clouded glass herbarium at his waist. It emerged with something that made the inspector jump back with a startled cry. On the curator's outstretched palm a perfectly formed little dragon sat placidly.

"It bears a striking resemblance to the traditional conception of a dragon, doesn't it?" Carstairs asked. "St. George's dragon."

"I'll say it does!"

"The resemblance is entirely coincidental. By some freakish twist of natural selection this hard-shelled, voracious plant has developed dragonlike characteristics in its battle for survival on Callisto."

"But why dragonlike?" gasped McGuire.

"It is the product of a lush, tropical environment filled with beaked ene-

mies — fling catchers — capable of piercing a steel disk two inches thick. Like the fume slugs. Snapdragon has learned how to protect itself. But instead of giving off fumes, it has built up a protective shell to thwart its natural enemies, extremely massive in front and curving out from its segmented body like the wings of a dragon.

"You will notice that it has teeth-rimmed jaws. I would not wish my worst enemy to receive a frontal assault from this agile little monster, Inspector. In a very few minutes it could tear a man to ribbons."

McGuire turned pale.

"I could tear—Carstairs, are you out of your mind?"

"I was never more sane," replied the curator quietly.

"No sane man would let a vicious killer plant hop around on his palm."

"*Crawl,* Inspector."

"Never mind how it moves. Put it back before it kills us all!"

"Steady, Inspector," Carstairs soothed. "You are in no personal danger."

McGUIRE'S face was apoplectic now.

"See here, Carstairs. I'm a very patient man, but—"

"You are in no danger," repeated the curator. The only man or woman in this room it might attack could give it lessons in viciousness. This grotesque little monster has a nose for murder."

McGuire drew a deep breath.

"A nose for murder?"

"In this particular case, quite probably."

Abruptly Carstairs tilted his hand and the plant dragon fell with a *plop* to the floor. It landed on its back, but instantly righted itself and reared up swayingly. Like knots on a tree bole, its rugose eyes were crinkling. With centipedal swiftness, it started across the floor toward the fifteen suspects. McGuire gripped the table with both hands, his jaw museles twitching.

"No plant could track down a murderer," he muttered hoarsely. "Carstairs, this time you've muffed it."

"Watch it, Inspector."

The suspects were gazing with horror, amazement and stunned incredulity stenciled on their features. Quickly, as McGuire stared, it approached the brittle-faced girl and slithered over her right foot, wrenching a scream from her. Legs a whirring blur, it swerved next toward the chemist. The dapper little man flattened himself against the wall and stood as though turned to stone. His face was chalk-white in the cold light which poured down from the ceiling.

Completely encircling the man who had threatened to sue the city, it zigzagged between the poet's legs, wavered for an instant directly in front of the young girl, its little eyes squirming. Then, with terrifying suddenness, it leaped. Ignoring the young girl, it grabbed a voluminous trouser leg, to which it clung with convulsively working jaws.

A cry of horror burst from the fat man. With a furious oath he smote the little monster with the flat of his hand, dislodged it, sent it spinning across the room.

"There's your murderer, Inspector," Carstairs stated. "Watch him."

The fat man's face went livid. Whipping out an automatic pistol he leveled it at the inspector's chest, started backing toward the door. His massive shoulders were jerking involuntarily.

"All right, I killed him," he sneered. "There's going to be a change in the Gobi Republic which Lee Chun would not have liked, a new order in Asia."

"But you are a white man!" Carstairs exclaimed, a queer tension constricting his throat.

"I wouldn't say that. My father was white."

"So that's why you hate yellow men," Carstairs said with grim understanding. "Subconsciously your real feelings came out. You may be a stooge for the Gobi army leaders, but you really do hate yellow men because you're a half-breed."

"I don't hate the right kind," the fat man boasted, his little eyes blazing.

"You mean not the kind whose pockets are lined. How much did

they pay you for assassinating Lee Chun?"

"Don't be insulting," rasped the fat man. "Lee Chun was an obstructionist. I am a patriot."

"Murphy, that gun is going to cost you your badge," McGuire grated, his neckcords swelling. "I told you to frisk him."

"With this gun alone, I'd be asking for it," the fat man taunted. "But I've got something more persuasive strapped to my waist—a wafer-thin audio-transmitter. My friends are standing at the controls of a van Deman helicopter, high in the stratosphere. If you interfere with me in any way I'll lower my head and speak to them. Do you want me to click the transmitter on?"

McGuire groaned.

"If I click it on and speak to them," continued the fat man relentlessly "they'll drop so many verticator bombs, the Third Level will look like a pock-marked planetoid. You want that to happen?"

"No," said Carstairs in a flat voice. "We don't want that to happen."

HE hurled himself at the fat man, his arms flung out ahead of him. The fat man blasted a split-second before Carstairs' skull thudded into his stomach and bore him backward to the floor. Over and over the two rolled.

The big man twisted about and tried to escape from Carstairs' clasp by doubling up his knees and jerking his shoulders back. Carstairs hammered away at him, until the murderer's face was a gory horror and he was screeching like a trapped wildcat.

The two police officers leaped unnecessarily to Carstairs' aid. McGuire shouted into the audio-visiscreen:

"Get me Military Intelligence, quick!"

At that instant the glass herbarium at Carstairs' waist broke with a vibrant *tinkle* and fifteen little dragons leaped out upon the floor. It was strong resistant glass, but not strong enough to resist the terrific blow the stout man had given it in a last, frantic ecort to escape from Carstairs.

As the curator rose swayingly to his feet, he could hear McGuire shouting:

"Military Intelligence? Police Inspector McGuire, Third Precinct, speaking. You've got to move fast. There's a van Deman helicopter hovering in the stratosphere directly over Manhattan. No, it isn't a licensed plane. It was probably flown in from South America. What's that? I'll tell you why I'm shouting. That helicopter is loaded with verticator bombs. That's what I said—verticator bombs! You'll have to train a dampening beam on it before you open up with the disintegrators. Give the d.a. beam five seconds. Then let them have it."

CARSTAIRS heard the inspector, but his thoughts did not ascend to the stratosphere as he reeled across the room toward Vera Dorn. Her pallor frightened him and the room seemed suddenly miles wide. The floor seemed to slip out from under him and his legs would not respond to his efforts to move them. The room horribly began to spin. His knees turned to jelly and he slumped to the floor in a dead faint.

"I just can't understand it, Carstairs," McGuire said, hours later. "All the chemicals in a diazo compound exist right here on Earth. Why didn't that vicious little dragon eat everything in sight?"

Carstairs was sitting on Vera Dorn's desk, holding the inspector's square-jawed, puzzled face in the palm of his hand, a circumstance which filled him with amusement. He grinned down into the audiovisphone, fumbling for a cigarette with his free hand.

"The chemicals exist," he admitted, "but they have to be united in a diazo compound to excite Snapdragon. Snapdragon comes from a world without oxygen. The soil of Callisto is impregnated with nitrogen in a peculiar combination. Snapdragon feasts on diazo compounds and nothing else get it?"

"No," stated McGuire bluntly.

"All right, put it this way. There isn't much friction, percussion or heat on Callisto, so the soil doesn't go off

with a bang every time Snapdragon feasts. But the entire upper crust of Callisto is a modified diazo compound."

"But I still don't see—"

"I played a hunch. I figured that the murderer's clothes would be impregnated with little particles of diazo dust. Diazo is made by the action of nitrous acid on aromatic amines, a flaxy mixture. Just by putting diazo into that dart, our fat friend turned himself into a walking banquet table for Snapdragon. A microscopic whiff of the stuff and Snapdragon starts feasting. And when once it starts it can't discriminate between microscopic flakes and human flesh."

"Good God! But how—how do you keep them alive at the Gardens?"

"Not by feeding them, Inspector. Too risky. When they die, we preserve them in formaldehyde. Our field men brought them back for as long as they'd last without nourishment. That's why the little monsters were so voracious."

"I see. Are you sure you broke your herbarium belt by accident?"

"Of course," said Carstairs indignantly. "I brought along a dozen Snapdragons just in case. I was prepared to anesthetize them if they got out of hand. I had an ether tin—"

"He pounded you so hard, you folded before you could use the ether, eh? Would you have used it in any case, Carstairs?"

"I don't know," confessed the curator. "There's one thing I'd like to ask you. How do you suppose he knew the dart would go up into the grandstand?"

"In a strenuous game of badminton," explained the inspector, "two or three usually go up and get lost. It wasn't the same dart he threw back. He just brought along a diazo-plugged dart and waited."

VERA DORN started typing so loudly that Carstairs had to shout to make himself heard.

"Inspector, I'm going to move into another office. My secretary is a shameless thrill-seeker. She was disappointed because Military Intelligence disintegrated the helicopter before it could drop a few bombs. She thought the bombs would give her an excuse to drape herself around my neck. What would you do if you had a secretary like that?"

"I'm a married man," the inspector grunted, "and I wouldn't know how to make a sound like a bomb going off. Good night, Carstairs."

The Return of Pete Manx in DAMES IS POISON, a Story of the Days of the Borgias by KELVIN KENT, Previously Announced for This Issue, Has Been Postponed to a Later Number. Look Forward to It!

•

RULE OF THUMB

By CHARLES STODDARD

Author of "Martian Menu," "The Thunderbird," etc.

Here's How Man Has Always Taken His Own Measure—and Has Had Dozens of Results!

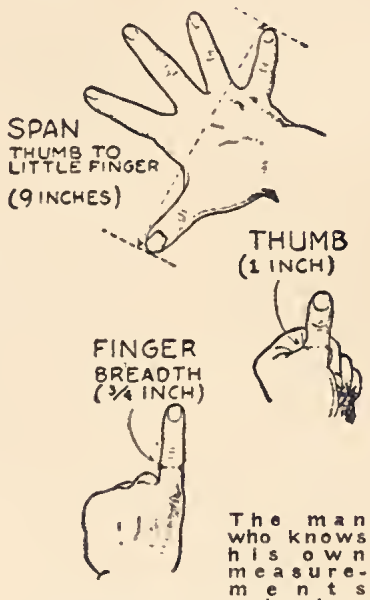
WHEN WE examine the origin of our units of distances, weights and measures, it instantly becomes apparent that we are the unhappy and usually bewildered inheritors of an archaic, outmoded measuring system.

Why must we painfully memorize a table that can't be constructed from a single common denominator? Inches, feet, yards, miles — they have no quickly detectable factor in common. Why do we have to remember, instead of being able to reason out immediately, how many ounces there are to a pound, pounds to a ton, quarts to a pound, and so on and so on indefinitely?

The answer is that primitive man took his units wherever he found them, whenever he needed them, and in whatever order they happened to come.

Not being able to reduce them to an easily intelligible system, he just had to remember dozens of unrelated units and keep their artificial relationship in his mind. And we, perhaps the victims of laziness or unwillingness to change, stubbornly hang onto a system that should be of interest only to a historian. We shall probably never rid ourselves completely of the outmoded measuring systems, but in time, many of them will be discarded. The foot, of course, is an easily identified object.

As an accurate unit of measurement, however, different people's feet are able to create highly unreliable mathematical results. Nevertheless it was the first and simplest measurement primitive man possessed and one to which he usually had instantaneous access. Its popularity, therefore, is obvious.

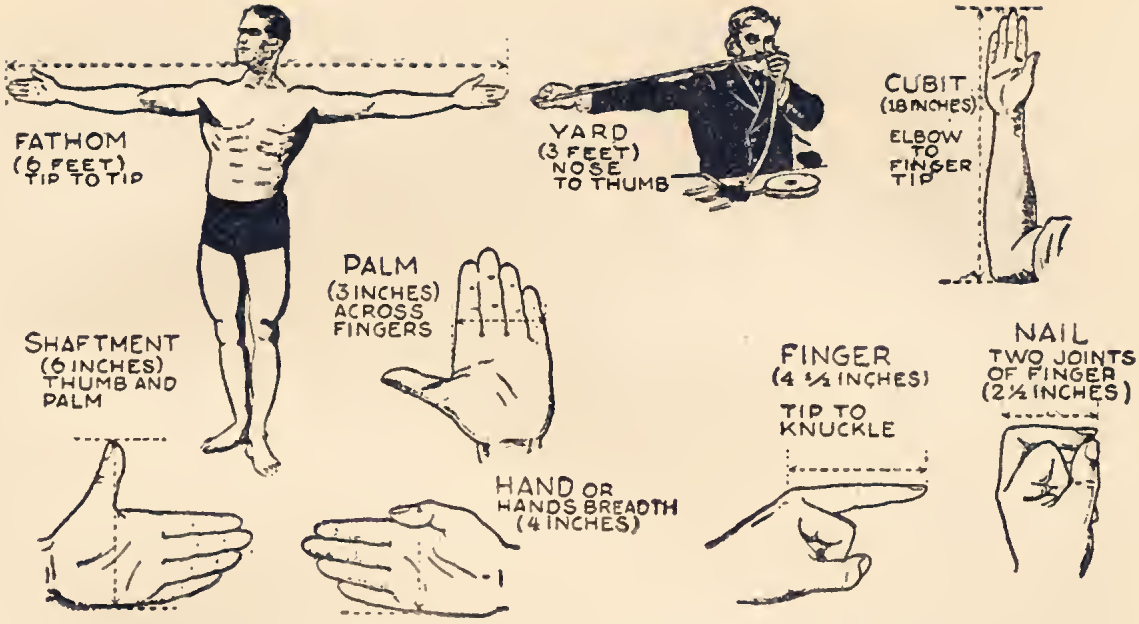


The man who knows his own measurements (whether more or less than the average) can very quickly learn to judge dimensions with a great deal of accuracy

Probably for the same reasons of accessibility and reasonable uniformity, early man based most other units of distance on various parts of his body. The inch, the twelfth part of a foot, is called a *pouce* in French and *pulgado* in Spanish—a thumb. In determining the exact length of a foot, man discovered that twelve times the width of the middle joint when the thumb is pressed down was approximately one foot.

Cubits Were Important

Cubits are principally familiar to us through the Bible. At one time, though, it was an important unit of measurement. And, like the inch and the foot, it was based on man's body—the length of the forearm from the elbow to the end of the middle finger, or roughly 18 inches. Since it



"Customary" standards of measure are to a large extent based on those of the human body; some of the above are obsolete.

was sometimes as much as 26 inches, however, we now have trouble figuring out the exact size of such Biblical objects as Noah's Ark and the Tower of Babel.

The yard is the distance around a man, or his girth. The hand, once a popular standard of measurement, now is used solely for judging the height of a horse. Like our own soldiers, the Roman's marching stride was five foot-lengths. A thousand of these paces he called a mile.

Complications Set In

Those were the principal units primitive man derived from parts of his own body. Instead of multiplying naturally by any one denominator, they jump from a twelfth to one, one and a half, then to three and finally to 5,280.

But that didn't satisfy all of man's needs in finding units of measurement.

A rod—actually a pole—of 16½ feet, and a chain 66 feet long, were also used for closer work. These measures were required to determine the old acre, a strip of land 660 feet long by 66 feet wide, which was a unit for plowing.

The old Greek used a hundred fathoms—about 200 yards—and called it a stadium. The course for footraces, one stadium long, has given its name to modern athletic fields. Eight stadia made a mile, but the Greek mile was 1,380 feet shorter than the present mile, which is eight acres' lengths, roods or furlongs of 660 feet.

Any Greeks in the House?

Thirty stadia made a parasang, or Persian league. If there are any Greek students in the house, they probably recall the parasang as the measure used in computing the day's march of the Ten Thousand Greeks. A

At a very early date, astronomers endeavored to calculate the size of the earth, which is too big to measure directly. They did so by taking the elevations of the stars at different places.

Our mile is from the Roman "mille passuum" — thousand steps of 5 feet each. Their foot was slightly shorter, and had 16 digits or fingers, instead of 12 inches.

we've discarded a few like the following.

A rest was defined as the distance in which a man could take an empty cart, fill it, and return with it loaded between daybreak and midday at Christmas time, when the days are at their shortest.

It was estimated at 3,000 paces, or three old miles.

Indefinite as the unit called rest was, it was much more definite than some American measurements of pioneer days.

Old Pioneer Methods

Old grants gave "as much land as a man could ride around in a day."

river's width was estimated in plethra—breadths—of a sixth of a stadium, or about 100 feet.

And just to make the confusion a little greater, the length of a foot differed slightly according to who was using the measurement. The old Roman foot was a third of an inch shorter than ours, making their mile only 4,864 feet long. But the old Frankish foot was more than three-quarters of an inch longer than ours!

And Now Chaos

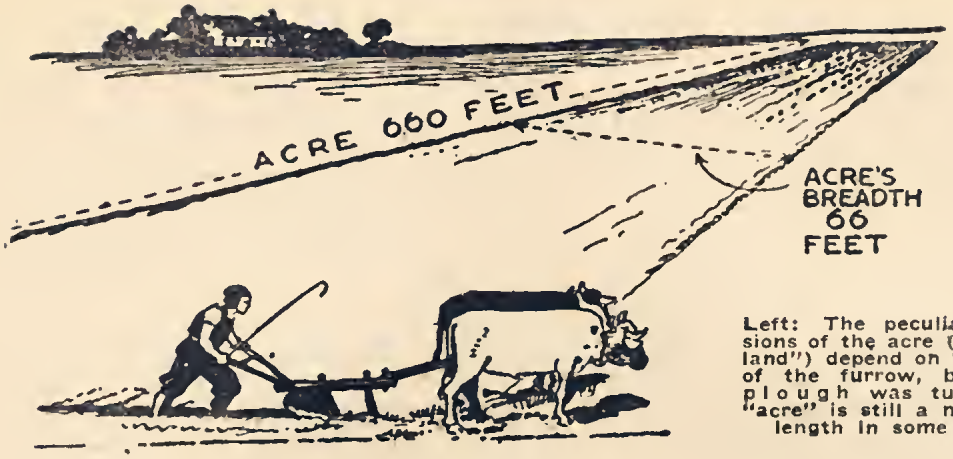
Whenever a measure was suddenly needed, man did not hesitate to use anything that happened to be convenient. Nobody can argue with his doing so. The question is whether we should adhere to outworn "rules of thumb." Luckily

Making a 10-foot pole in old Bavaria for a local standard.

That may have been all right when the plains were unfenced grazing land, but it explains why modern surveyors go mad when they attempt to survey the boundaries.

And Staten Island, in New York Harbor, was included in the province of New York because of the fact that a sailing vessel could go around it in one day. Previously New Jersey had claimed it, but the sailing test was considered decisive.

In Spanish America, a description of land might be "As much as a man can ride around in a day." Hard on the modern surveyor.



Left: The peculiar dimensions of the acre ("ploughed land") depend on the length of the furrow, before the plough was turned. An "acre" is still a measure of length in some places.

Even in ancient days a few men were dissatisfied with the chaotic system of measurement in use. When an idea was gained on the site of the Earth, an attempt was made to set up standards independent of the human body.

The Caliph Al-Mamum, in the eighth century, A.D., received a report that "a degree is 56 2/3 miles, of 4,000 cubits, each of 24 digits, of 6 barleycorns of 6 camel hairs."

Nobody today knows just how those barleycorns were placed to measure off the cubits. Three barleycorns, end to end, made an inch in the old days.

But if they were set side by side and that cubit was 19.3 inches, Al-Mamum's estimate of the Earth's circumference was remarkably accurate. Columbus would have done better if he had taken those figures instead of his own estimate which, falling several thousand miles short, made him mistake America for China.

Incidentally, shoes are sized according to the ancient barleycorn measurement. Each barleycorn makes one full size, and three full sizes are about one inch. Of course, if you wear an 8½ this doesn't mean your foot is slightly under three inches in length. There are three size-runs before yours begins.

Feet, however, have nothing to do with the birth of a rational system of distances, weights and measures, which first saw the light of day in France in 1795.

Ever since primitive man began trading with his neighbors he had, as we have seen, collected an anarchic mass of only partially reliable standards. But in 1795 the clear-thinking French threw out all these artificially related units and substituted a standard that was scientificaly accurate and required no memorizing.

The Metric System

The size of the Earth had been determined almost exactly by then, so it was decreed that the basic unit should be 1/10,000,000th part of the distance from the equator to the North Pole on the meridian of Paris. A standard bar was constructed of platinum-iridium alloy. The distance between two scratches on two plugs in the bar, when it is at the temperature of freezing water, was declared to be one meter.

Using the meter as the standard, the

Land was once measured by the pound. An acre, worth ten pence, and with a rent of a penny a year, was the basis. As 240 pennies make an English pound (money) so 240 acres was a pound. A "knight's fee" or estate was five to ten pounds of cultivated land.

French built up a rational decimal system that needs only a glance to be instantly understood.

Unlike our cumbersome method, the metric system is capable of indefinite extension. The framers of it stopped with the millimeter, a thousandth of a meter, but scientists have given it even greater accuracy. They have reduced the units to a micron, or a millionth of a meter, the millimicron, or thousandth-millionth of a meter, and the Angstrom Unit, used to measure wavelengths of light, which is a tenth of a millimicron.

On the other hand, astronomers need cosmic units. From the kilometer — 1,000 meters, roughly 3,281 feet—they have progressed to the Astronomical Unit, or average distance from the Earth to the Sun, the light-year, or distance traveled by light in one year, the parsec, or distance at which the A. U. is seen covering one second of arc—19.2 million miles—and even the megaparsec, or million parsecs.

Back to Weights and Measures

As commerce developed and precious metals came into use, primitive man needed more accurate units than "as much as can be held in the hand," or "as much as a man can lift."

There have been many standards of fine weight in history, probably beginning with the seeds of the Rati, or wild licorice plant, in India. They are so uniform in size that a given number is close to a constant weight.

In the Occident, several grains are about as uniform as the seeds of the Indian Rati. Well dried wheat, from the middle of the ear, was once a unit of weight on which a whole system was based.

Our present basis, though, is barley. The English unit of currency, until 400 years ago, was the penny, a coined silver piece of much greater value than the modern coin. But the penny, determined by balancing silver against 24 grains of barley, was also a standard measurement known as the pennyweight. The pound was a pound by weight of coined silver—240 pennyweights of 24 grains of barley, containing 5,760 grains.

The troy pound is still 5,760 grains, but the grains have been made slightly heavier, in accommodating the old Mint or Tower pound to the pound of Troyes, an important town in the history of weights and measures.

In the Middle Ages, when communities were more isolated than today, each village had its own rough-and-ready set of standards. It was only at great trading towns that a standard was applied to wares from different countries. The troy weight, in which gold and silver are measured, was based on that of Troyes, in Northern France, once a place of great trading importance.

Avoirdupois

For articles other than precious metals we still use the pound avoirdupois, which contains 7,000 grains. The old spelling — averdepois — indicates that it was used, in distinction from fine weight in determining quantities of gold and silver, for "aver" or heavy important merchandise received at a harbor—"havre."

Two thousand pounds made a ton, but for coal at the mine, pig iron and steel there is a long ton of 2,240 pounds. This is due to the fact that a hundredweight is 112 pounds, since the hundred was originally a more elastic term. St. Bede, writing in the eighth century, explained that "a hundred times 130 is 15,600." The Saxons called 120 a "hundred."

For that reason weights, more than distances, were apt to be in successive units, each doubling the one before it, or in powers of two, such as four, eight, sixteen. Sixteen ounces made a pound, sixteen pounds a stone, sixteen stone a wey, or horseload. Since then the stone has been reduced to fourteen pounds, making it just one-eighth of a hundredweight.

An old measurement still in use, is the quarter, but its derivation had been forgotten until investigation in the 19th century revealed its lost history. A quarter of wheat is eight bushels, but of what is it a quarter? Research discovered that a ship's ton is 40 cubic feet, which will hold just 32 bushels.

And that, of course, brings up the question of ship's tonnage. A warship is rated by her displacement of water, or actual weight. But a merchant ship is rated by the amount of enclosed space inside her, as in the old days, when she was measured to see how many tons of wheat her hold would contain.

Antiquity Survives

An ancient weight that is still used —in fact, more widely now than ever before in history—is the carat. This unit was based on the bean of the carob, or Greek Keration, known to us today as St. John's Bread. Twenty-four of these carob beans were the weight of a gold coin of the Roman Empire, the *solidus aureus,* as 24 barleycorns equaled the weight of the English silver penny.

If a coin was of pure gold, there were 24 carats of gold in it, indicating that it was one hundred per cent pure. If alloyed, as gradually became the custom to stretch the precious metal out further to debase currency it might have only 22 or 20 carats of gold. Thus the carats express the number of 24ths, instead of hundredths, of precious metal in an alloy.

Carats, we know, are also used to weigh jewels, but for centuries the unit in different gem centers varied considerably. The London market used a carat equal to 0.2053 grams, or 3.163 troy grains. In Florence it was 0.1972 grams, in Amsterdam 0.2057 grams, and so on. The United States in 1913 adopted the metric carat of 0.200 grams—200 milligrams—and it has now become the standard in the principal countries of the world. The metric carat also permits the weight of gems to be expressed in decimals, instead of a clumsy series of fractions.

Differences in the Same System

At the present time the United States adheres to the old liquid measure, the Queen Anne's gallon, while Great Britain uses the Imperial System. The result is that taking a gallon from London to New York converts it into nearly five quarts, and taking a gallon from New York to London reduces it by a sixth. The American pint has 16 fluid ounces, whereas the British has 20, though the British ounce is four per cent smaller.

This is the principal difference between the "customary" systems of both countries, but a considerable number of weights and measures survive in local or trade use. For instance, a tool of wool is 28 pounds, a clover of butter eight pounds.

When the metric system was founded, it was intended that a cubic decimeter—a thousandth of a cubic meter—of water should be a kilogram, the basic weight, and also a liter, or measure of capacity. But the standards that have been made and adopted do not tally. The standard liter, which is a little more than an American and less than a British quart, contains the thousand cubic centimeters it should, plus 1/37 of a cc. over. So there is a difference, though small, between cc. and ml.—milliliters.

Also, refinements in science since 1795 have corrected the original estimate of the Earth's dimensions. It is now estimated that the distance from the equator to the North Pole, supposed at sea-level and disregarding the actual land surfaces is 10,002,288.3 meters. But it is the meter rod at Paris, not the Earth, which is the controlling authority.

The American unit is not the foot, inch, or mile, but the yard, which is 3600/3937 of the meter. The British standard yard, however, is more fractional, 3600/3937.011. But the difference between American and British measurements of the circumference of the Earth is less than 400 feet.

Romance of Weights and Measures

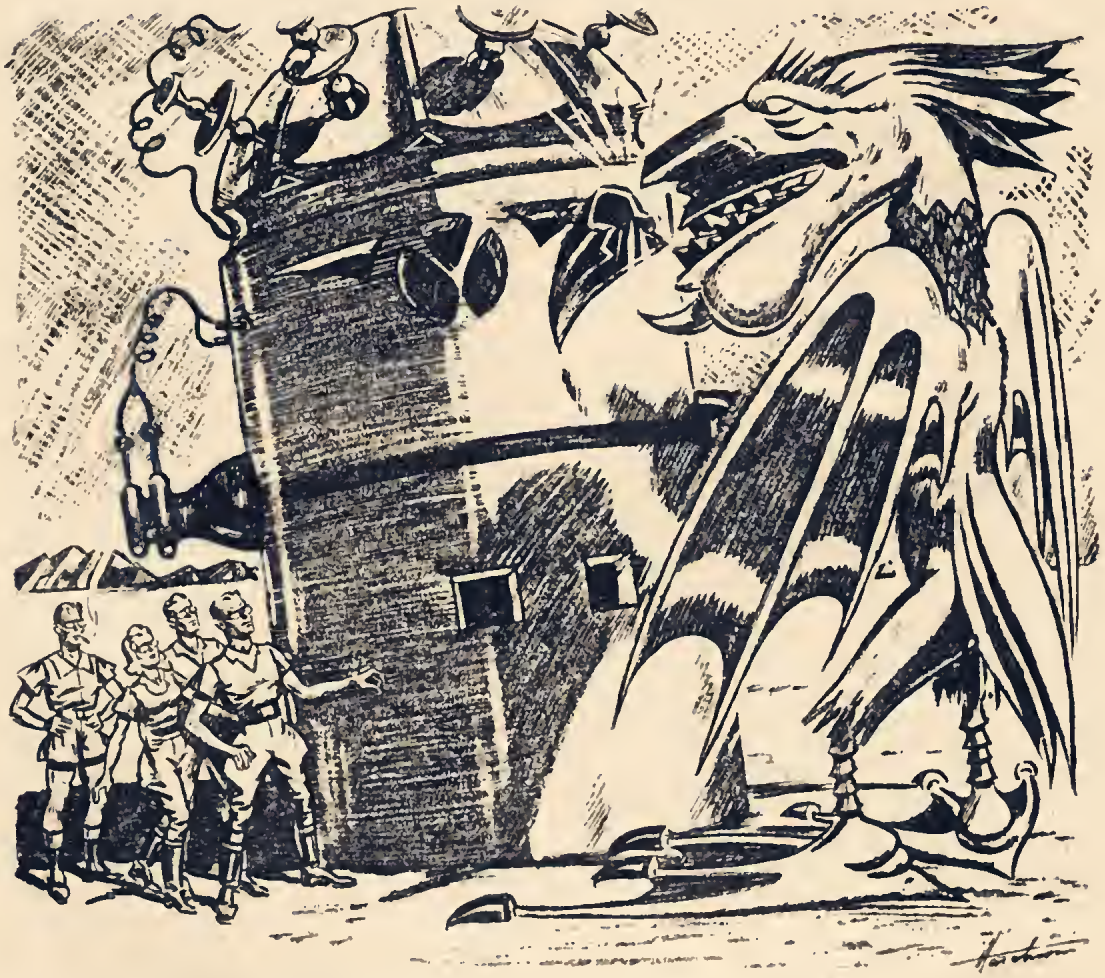
The Babylonians had a double cubit, used in their buildings, which is almost equal to the meter. Since the metric system was based on the distance from the equator to the pole, one authority suggests that the Babylonians knew the dimensions of the Earth. But the Babylonians computed by sixties, rather than hundreds, so their measure would have

(Concluded on page 117)

WITHOUT ROCKET FROM EARTH

By H. L. GOLD

Author of "Hero," "None But Lucifer," etc.



The Martian Animal snapped his bill while picking at the resistant metal

When the Human Element Won't Combine in Man's First Flight to Mars, He Can Still Thank His Stars for the Little Element That Wasn't There!

ADOLPH W. HURTZ was tall and ascetic, with cold gray eyes that were so close together they looked as if they could be poked out with a single finger. He stared frigidly across his huge desk at the four people before him.

Owen Morrow, the famous old financier, was tottering around like an infuriated sparrow, twittering in rage at the top of his birdlike lungs. The other three, perhaps because they were scientists and thus presumably more cerebral, were contenting themselves while glaring venomously at the notorious publisher. Donald Crane, his

wife Lynne and his brother-in-law Ralph Winston had too much to lose by not controlling their tempers.

"I don't see the necessity for hysterics," said Hurtz when the old banker paused to catch his breath. "This can be a simple business deal."

"Blackmail can always be a simple business deal!" shrilled Morrow. "And so can a libel suit. You're accusing me of shooting these people to Mars to make myself famous, and claim they'll never reach it alive. You're calling me a *murderer!*"

"Not in so many words," Hurtz replied coldly. "My men are too carefully trained to make libelous statements. You could never get a conviction."

"He's right," admitted Don Crane, gazing down at the luridly colored newspaper on the publisher's desk. "The whole article was written by a master of yellow journalism. But that picture is what really makes me bitter. There isn't an automobile mechanic who wouldn't laugh at it."

On the front page of the paper, in the exact center, was a strikingly executed four-color painting of three people in transparent bullet-shaped vehicles, being fired from what looked like three cannon. The artists who had painted the nonsensical scene had made unmistakable portraits of Don and Lynne Crane and Ralph Winslow, Lynne's brother. They looked just as they did now, except that they were not wearing the tan breeches, purple sweatshirts and crash helmets the painter had given them.

"By Mr. Morrow's unwise statements at the Union League Club," said the publisher, "I learned that he was backing your secret expedition to Mars. Naturally I resented your attitude toward the press. I had no details of the actual method of transportation from Earth to Mars, so I was forced to invent one."

"It's an insult to the intelligence," Ralph said in disgust. "What are those steel vests around our chests for? And what's supposed to happen when we pull those ridiculous iron ripcords? Do we come down on steel parachutes?"

"Of course not," replied Don Crane sarcastically. "What do you think those ten-inch propellers are for, under the shells? What bothers me is that they're not connected to any motors."

"Oh, they work by will-power," Lynne explained sweetly. "And the iron ripcords attached to our steel vests are just as simple. When you pull them, everything falls apart, including Mr. Hurtz' idiotic blackmail scheme."

"No, his scheme is hardly idiotic," said her husband grimly.

THE publisher leaned forward, his fingertips piously pressed together.

"Hardly," he agreed. "Mr. Morrow's unwitting betrayal of your secret revealed that you are anxious to keep your method of transportation from the public. I am positive that the method I conceived and had the artist execute is so close to the real one that denial would mean revealing the truth. I know you wouldn't want to do that. Therefore, I am offering you an alternative."

"What is it?" snapped Morrow.

Hurtz pushed a button on his desk. The man who entered needed careful scrutiny to see that he was not as average as he appeared. Don Crane's sharp eyes detected the ripple of smooth, powerful muscles under the wrinkled suit, the height of breadth of forehead that could not be entirely concealed by the deliberately unkempt hair.

"Arnold Lee," said Hurtz, "my best reporter. I want you to take him along with you to Mars. In return I agree to stop my exposé."

Morrow turned and looked despairingly at the three.

"It's up to you," said Don. "You know what it means if the secret is exposed."

"I'll take the reporter," Morrow groaned. "But I'll ruin you, you dirty yellow journalist!"

"A shrewd decision," applauded Hurtz ironically. "He'll be no bother at all."

"Nope," Arnold Lee agreed, slipping a cigarette into the corner of his mouth and talking around it. "I'll

stay strictly out of the way. A story is all we want. When you're ready to shove off, call us up and I'll jump right over."

"You must have been born without nerves," said Lynne. "Are you aware that we're going to another planet, using a means of transportation that's never been attempted before?"

"Quite," the reporter answered negligently, lighting his cigarette.

"Don't you ever think of danger?"

"I try to think of posterity instead," sneered Lee.

Hurtz smiled faintly. "I told you he was the best man I had. And in case you think you can doublecross me, the exposé can be resumed at any time. Good day."

OUTSIDE the lavish *Globe* building, Morrow expelled his breath in violent relief.

"Well," he exclaimed, "that certainly was inexpensive blackmail."

"Don't be too sure," warned Don. "Our invention de-materializes living beings, transports them to wherever there's a materializer, and reassembles their atoms there. We intend to shoot a rocket ship to Mars, containing a materializer but no passengers, and controlled by radio. When the ship lands, we will transmit ourselves to Mars and rematerialize there, in that way avoiding the seven-mile-a-second acceleration in escaping Earth's gravity. You know what such an invention in unscrupulous hands can do."

"Any nation with aggressive notions," supplied Lynne, "can overrun its neighbors by planting materializers in strategic places and transmitting whole armies. Or crooks could empty the vaults of your banks overnight."

The old man went white, but he shook his head bravely.

"We've still got the secret. Nobody knows about it yet."

"Just the doomed painters and miners we cured," said Lynne. "They might have got some idea of the device."

"We were too careful for that," Don replied, "but I don't like Hurtz' terms. They're too easy, and he doesn't waste paper and ink for nothing."

"Yeah," Ralph assented. "I'm afraid we're in for a good deal of trouble."

But in the months it took to complete their preparations for the secret expedition to Mars, their fears seemed unjustified. Nothing at all happened.

They completed the materializer, which, since it was to be sent with the ship, was needed first. By that time the rocket itself was ready for delivery. They ordered it conveyed to a ranch they hired in Texas, then went to meet it there. By themselves they put the rocket together and installed the materializer. And one bright afternoon, when the Sun was glaring down blindingly, Morrow was given the honor of throwing the radio switch that controlled the ship. In a roar that was lost among the vast spaces, and with a blaze that was invisible in the fiery sunlight, it shot straight up. A single instant and it was out of sight.

Six weeks later they were able to watch the televised landing on Mars. They took automatic readings of the atmosphere and studied the landscape, comparing it with their ionoscope map and the map they had made as the ship descended.

"That's it, eh?" asked Morrow, pointing at a black area on the ionoscope map and then at a blocked-off area on the other. "If it's yttrium, you're on your way to becoming millionaires."

"And you'll be a billionaire," replied Lynne.

"But what about Lee and Hurtz?" Don asked pessimistically.

"Don't worry about them," said Morrow. "Reporters and publishers don't know the difference between yttrium and ytterbium. I don't myself, you know."

"No?" Ralph answered. "I'd not be surprised if Lee could work out mentally the application of the Lorenz-Fitzgerald Contraction to a speck of mud on a snail."

Lynne shrugged. "It doesn't matter. Lee can't do any harm on Mars."

"Wish I could believe it," Don said gloomily. "It's a small world."

THE de-materializer had been completed by then. In answer to their telegram stating that they were

ready, Lee arrived at the ranch in a shaky taxicab. He glanced at the locked door of the temporary lab in the big ranchhouse.

"Finished, huh?" he asked casually. "Well, let's make it fast. Friend of mine's due to pull a kidnap job soon, and I have to get the yarn."

Even Lynne refrained from making a retort, for Morrow had insisted that they be polite to Lee. If they ever got off Earth and landed on Mars and succeeded in returning, they would need Morrow's financial backing for other ideas, so they humored him. Don unlocked the laboratory door and led them in.

Most of the room was devoted to a shimmering-walled chamber, its pointed roof filled with visible machinery. On the floor of the semi-transparent chamber rested crates of provisions and tanks of water. Other stores had already been sent by rocket to Mars, but there was a possibility of damage, and they didn't want to interrupt the journey by having to return for supplies.

"Well, Mr. Morrow, we're on our way," said Don.

"Yes, sir," added Lynne reassuringly. "You're practically in the history books of tomorrow's children."

Morrow beamed as they entered the chamber, followed by the negligently slouching reporter with the ever-present cigarette between his lips. He was just about to light it when they waved to the financier and Lynne was given the privilege of throwing the switch. *Fffffttt*—

And they were on Mars.

It was as simple as that. Lee's cigarette hadn't even been lit yet. The de-materializer had disassembled their atoms, shot them along the tight-wave beam to Mars, and the materializer had reassembled them, including the match flame.

"We're here!" Lynne cried. "We're on Mars!"

They rushed to the ports, stared out at the desert scene.

"Trying to kid me?" snarled Lee. "That's Texas. It's the same sand."

"Not exactly," Don answered patiently. "That reddish tinge is different, caused by oxidized iron. And that's not cactus. Cactus, you see, doesn't walk."

"There are a few other trifling differences,'" added Ralph. "The two or three shadows on the whole plain are almost absolute black, and the sky is purple."

"You don't often see things like that in Texas, do you, Mr. Lee?" asked Lynne with polite sarcasm.

"Don't know," the reporter growled. "First time I've been here."

"Or there," said Don. "Texas is about fifty million miles away."

He knew he didn't have to continue trying to convince Lee. The reporter's face was pale and his fists were clenched. Behind his narrowed eyes Don could see the grudging belief grow in spite of the man's mental opposition. Don could hardly blame him. The concept of traveling from one planet to another in the time it took to light a cigarette, and the thought of being among the first group to visit Mars in the entire history of mankind were almost too much for Don himself.

DON moved aside slightly, heard Lee curse under his breath as he saw the perambulating plant that Don's shoulder had partially obscured. No living thing on Earth ever resembled the vegetable monstrosity parading before them. It looked like a small bush, with long fronds that waved about, as if it were staring, smelling or listening with a weird sensory apparatus. Faced by the strange plant, Lee could no longer doubt that he was on Mars, or at least off Earth itself. And the knowledge was terrifying. Don saw the awe on the faces of his wife and brother-in-law, knew that his own reflected the same overwhelming emotion.

"Well, let's do something about it, now that we're on Mars," Lynne said, trying to suppress the quaver in her voice. "Why don't we go outside?"

From the televised atmosphere readings they had discovered that Mars' air was thin, but the oxygen content was several times that of Earth. When they put on dark goggles and went through the unnecessary airlock, Don told them they could

walk without oxygen tanks if they avoided haste.

They stood on hard sand, gazing at a desert that looked remarkably like Texas, excepting the black shadows, the purple sky and plants that walked around.

Suddenly a shrill scream, like an approaching ten-inch shell, slashed the thin air. A whizzing shape shot down and landed flat on what seemed to be its belly. Lee shouted and dropped to the sand, trying to wriggle under the ship. Lynne gasped at the nakedly hairless and featherless creature that was folding its membranous wings and struggling painfully erect on vast webbed feet. But it was almost a gasp of sympathy.

"The poor thing," she breathed. "It's all out of proportion."

It certainly was. Its pointed beak was as long as its skinny body, the translucent wings resembled frankfurter casings, and the clumsy feet were almost as large as the bill and body combined.

"On the ground it is," Ralph said. "But in the air it must travel like a bullet. Everything, including the feet, must be retractible."

They stood motionless in the shadow of the rocket as the flying creature waddled across the sand like a skeleton with double gout. It stopped for a moment, its tiny eyes puckered up and staring at the unfamiliar sight.

"It's coming toward us!" Lee yelled as it approached again. "It'll attack us!"

Don shook his head. In the dense shadow, the motion was almost imperceptible.

"I don't think so," he said. "I think it can't even see us."

The creature, its absurdly long bill poking forward with obvious curiosity, was walking around the edge of the rocket's shadow toward the bright metal side.

"Its enemies probably lurk in the shadows," Ralph offered.

When the Martian animal reached the gleaming wall, it took a few experimental pecks at the meteor-resistant metal. There were several *clangs* and then a sharp *snap*. The alien creature looked more ridiculous than ever, with its giant bill snapped off short and its enormous feet seeming twice as large as before. It looked down in pained sorrow at the section of beak lying on the sand, cautiously opened the remainder of the bill and clacked it shut. Apparently satisfied, it took a short, ungainly run and streaked into the sky.

"Nothing awkward about its flight," Don said. "Did you see how its feet folded back? With that long beak, skinny body and retractible feet, it's like a lance in the air, only a couple of hundred times faster."

"But the broken bill," mourned Lynne sympathetically.

"It'll probably heal," Ralph answered. "I'll bet it even grows out again. Nature protects things as delicate as that by making them replace themselves."

LEE got up and pretended he had not been scared. The others, following their enforced policy of politeness, carried out the pretense. They went back into the ship and returned with canteens and knapsacks of food.

"Gravity is less than half of Earth's," warned Don, "so don't try striding at first. You'll find yourself tumbling through the air and using up oxygen."

"Which way?" asked Ralph.

Don pointed carelessly at the distant red hills, as if picking a direction haphazardly. For the first few miles they swung easily over sand that felt as hard as a highway, but suddenly they discovered the reason for the Martian bird's huge feet. Ralph, slightly ahead of the rest, abruptly plunged from sight into a deep pit of sand that was as fine and soft as lycopodium.

They rushed up to help him. By that time, though, he had floundered to the surface and was actually swimming through the soft silt toward them. They pulled him to hard sand. He spat out a mouthful of dust and thanked heaven that they had put on goggles, or he would have been blinded.

Proceeding more carefully now, they skirted the wide pit of silt and

began heading again toward the hills. This time, however, they knew the danger and had learned how to recognize it. Whenever they came to a stretch that was the color of burgundy against the red desert, they gave it a wide berth.

After several hours they took a short rest and then continued their exploration of the red planet. Behind them their trail was clearly marked across the sand, and Don had fixed the position of the ship by the stars. There was no possibility of getting lost, even if a sudden wind covered their tracks.

By the time they reached a low hill, they were panting because of the exertion and the difficulty of catching a satisfactory breath in the diffuse air. The thrill of being the first Terrestrial visitors to Mars was losing its first sharpness under the remorseless fury of the Sun and the unceasing monotony of the red landscape.

"Where the devil are the canals?" Lee complained.

"If they're actually canals," Ralph snarled politely, "they're about two hundred miles away, the nearest ones. We'll explore them later."

"If we stay here that long," growled the reporter. "This place is getting on my nerves. We haven't even seen a walking plant for the last hour."

"Mars certainly isn't densely populated," Don admitted.

"Speaking for myself," said Lynne, "I feel a little disappointed, too."

They resumed the march, climbing now up the low, rolling hills. Near the top they saw what appeared to be the Martian equivalent of a timberline—clumps of ragged weeds that huddled together in two-foot patches at intervals of two or three hundred yards. They merely added fringes to the deadly barrenness.

But on the wide, flat plateau, the four explorers saw Mars' pitifully few splendors. Ten bushes, ambling around in search of edible soil, gathered around them, waved some attenuated fronds inquiringly, and wandered off again. And on this side of the hill were many purple stretches, which they knew to be the dangerously soft dust. Through binoculars they saw cubes of artificially packed sand, around which waddled the giant-footed Martian birds. There seemed to be a whole tribe out there, no less than four hundred strong.

IT was the range of hills itself, though, that made at least three hearts start pounding with excitement. With only irregular unevennesses here and there, it was a comparatively unbroken line of tableland. And less than a mile away was a circle of pure white!

Against the red soil it was a visual rest, a blessing to eyes that were beginning to rebel at the unceasing monotony. As if racing toward an oasis, the four explorers hurried to it. Even Don ignored his own advice and, like the others, found himself sprawling in the air again and again.

But when they reached the white circle and halted there, panting for breaths that cut their lungs like knives, the three kept their faces from betraying their inner exultation. Don glanced at a device on his wrist that resembled a watch. He looked up, caught the others' eyes and nodded slightly. The electrostatic needle had gone clear to the negative side. The white soil was chemically pure yttrium, the first known deposit of the uncombined metal! And the deposit was three-quarters of a mile in diameter and probably hundreds of feet deep—millions of tons of metal worth billions, an unthinkable fortune!

Lee glanced down at the white soil disinterestedly.

"Nice to look at for a change," he remarked. "Now how about eating?"

They agreed hastily. When they were finished and ready to return to the ship, they were almost eager to leave the circle of white. The Sun, blazing down through the unresistant air, struck the refracting white soil with double its usual intensity. In spite of their dark goggles, their eyes were watering.

Back inside the ship again, Don was closing the airlock when he heard a gasp behind him. He whirled, stared into the muzzle of a gun. Slowly he raised his eyes to meet Arnold Lee's.

"I think you understand the situation," the reporter said quietly. "From the incautious remarks of Mr. Morrow, Mr. Hurtz and I realized the possibilities of your invention. I have never written a news article, but Mr. Hurtz believes that a physicist, which is what I really am, should be able to do almost everything. I still have not written an article, but I have captured your apparatus and ship."

There was a momentary shocked silence.

"Do you think your—" began Lynne.

"You've captured them," Don cut in quickly, "but can you run them?"

Lee nodded confidently. "I think so. After killing you and burying your bodies in the sand—or perhaps in the silt pits—I'll have all the time I want to experiment with the controls. And I also want to thank you for locating that incredibly rich deposit of yttrium. It was very considerate of you. Luckily my watch has an electroscope built in it. I've found it helpful when I've mislaid a radium needle. It also, of course, indicates the presence of pure yttrium."

"But are you sure you've thought of everything?" asked Don. He moved forward slowly, his eyes on Lee's, his face completely innocent. "We know the importance of this machine as well as you. You must have realized that we wouldn't leave the de-materializer unguarded. You've captured this end of the transportation system, but what about the other end?"

"Hurtz should be there by now with five of the boys. Those cowpunchers you hired to keep an eye on the place will be a cinch for five trained hoods."

LYNNE stamped her foot in rage and demanded:

"Are you going to let him steal our invention? You know perfectly well —"

"But *he* doesn't, sweetheart," Don interrupted hurriedly. He lunged with startling suddenness at Lee's gun-arm. An instant before he reached it, Lee jumped back, his face dark with anger. Savagely the "reporter" yanked at the trigger. Three explosions blasted their eardrums, the shots were pointblank, but Don did not fall. He kept coming in, his eyes murderous, his fists swinging.

"Die, curse you, die!" screamed Lee. He fired again. Don struck him on the side of the head. He fell back, fired two more shots, whitened when he heard the hammer *click*. He hurled the gun at Don, who ducked effortlessly. He continued to scream helplessly: "Die! Die, you blasted zombie!"

Then he choked back his curses, cringed from a knife that had suddenly appeared in Ralph's hand. Don was standing erect, massaging his knuckles. Lynne had overcome her fury and was smiling brilliantly.

"You poor thing," she said with mock sympathy to Lee. "After all your hard work, we have to go and ruin everything by not being able to transmit lead, the most inert substance on Earth, through our de-materializer. We should have told you we used the apparatus to cure lead poisoning in doomed house-painters and lead-miners. The patients are subjected to the de-materializer, then transmitted to a materializer, and on the floor of the de-materializer we find the lead that had been in their bodies. It works wonderfully—"

"But not with bullets," added Ralph. "Bullets, you see, are made of lead. You started with a loaded revolver and arrived with an empty one."

"You'll find all six bullets on the floor of the de-materializer," Don said, "when you get back there in Texas with a ticket to Alcatraz around your neck. Those 'cowpunchers' you were referring to are Texas Rangers. I'm sure they were able to handle Mr. Hurtz and his five gunmen, and I'm sure they can handle you, too, if we aren't able to. Let's go, folks."

He grabbed Lee's nerveless arm, while Ralph held the knife against the prisoner's back, and together they hustled him into the materializer. A turn of a switch, and the receiving apparatus was converted into a de-materializer.

"But we haven't seen the canals yet," Lynne objected.

"You will, dear," promised Don.

"You can come back in a half-hour, after we turn our captive over to the Rangers. It's only fifty million miles there and another fifty million miles back. You can start a blink here and finish it on Earth."

She smiled still more brightly than before and followed them into the de-materializing chamber.

RULE OF THUMB

(Concluded from page 109)

to be a twelfth of a 1,296,000th of a quadrant of the Earth, rather than a 10,000,000th, an awkward reckoning that would be more of a hindrance than a help.

It has also been conjectured that the Egyptian measure was the length of a pendulum which would swing 100,000 times in a day. Even this is probably a coincidence. They used a cubit of seven palm-breadths, but seven was a sacred number to them, as ten is to the advocates of the metric system.

A Scientific Age

There is another suggestion, probably accounting for our adherence to the old system of standards, that the metric system, for all its scientific advantages, does not fall into units as convenient as the old "rule of thumb" for many of the purposes of ordinary life. But we science fiction advocates realize that the world is becoming more scientific, and ordinary life, also becoming swiftly rationalized, requires as scientific a system of distances, weights and measures as science itself.

What author would ever dare to describe a space ship as being a thousand hands high and traveling at a rate of a million cubits a second?

NEXT ISSUE'S NOVEL

VIA JUPITER

By EANDO BINDER

AN EPIC OF THE SPACEWAYS

ORDINARILY we clutter up this department with a little fact and fancy that our science editor and his associates overlook—or when we deliberately steal a march on them. For instance, there's some new dope of the sun's corona and the aurora borealis that we'd like to slip in here, but we'll save that for next issue. Right now we've a special bright flash and are we proud to present it! It's about the Prize Story Contest.

While we try to allude to the constantly running Amateur Story Contest in every issue, we don't have enough to report every time we go to press to make a special announcement. This time we have. Since the last prize award there have been two prize winners. Here they are:

1. Broox Sledge wins with RENDEZVOUS IN THE VOID.

2. Daniel A. Alexander wins with TWISTED DIMENSIONS.

There is a neat list of six contestants who won honorable mention, and that's no small honor in this tough perennial contest. They are, in the chronological order of their recognition:

Allan Bovelle .....Oak Park, Ill.
Kenneth D. Mertel.....Mountainberg, Ark.
Samuel Hoffman .....Brooklyn, N. Y.
George Malsbary .....Los Angeles, Calif.
Anthony Barbara .....New York, N. Y.
Jon McLeod .....Jacksonville, Fla.

Regarding the winners, RENDEZVOUS IN THE VOID and TWISTED DIMENSIONS, we, as well as the respective authors, will be anxious to learn your reactions to the two yarns. RENDEZVOUS IN THE VOID appears in the next issue, and the other yarn will appear shortly. As for the many contestants who entered, and those receiving honorable mention, we appreciate your earnest cooperation and regret that you did not win.

There were numerous ingenious ideas and more than one story with bright bits. We, the editors, are just as sorry as you that they didn't quite make the grade. Nothing compares to the thrill of discovering a brand new author with a swell little story nicely told. By all means, try again. Who knows, you may click with the very next effort!

And as for you thousands and thousands of readers who have never taken a crack at this Amateur Story Contest, why don't you cook up that idea which is kicking around in your brain and type out a short story of from one thousand to six thousand words? We challenge you!

CONTEST RULES

THERE are practically no rules for entering the Amateur Story Contest. Simply write out your story in typewritten form on one side of the paper, using standard 8½x11 white stock. Use a legible ribbon and double-space with about a one-inch margin around the border. Neatness helps.

The only specific rule is that you have never sold a story for money to any publication whatsoever previous to entry in this contest.

Simple, isn't it? Yes, we know—writing the story is the hard part. But that is up to you. And remember that we are anxious to find prize winners. We do not expect perfection. The reward is that each accepted story is purchased at the same rates paid to our regular professional and seasoned writers. Break in at the top!

Don't forget for a miunte that the Amateur Story Contest knows no closed season. It is always running, whether you see a specific announcement or not. Next issue we are not going to take up all this space with contest stuff, but we intend digging a bit in the future, coming up with a few items to scoop the science editor and make him gnash his teeth in fury.

THE LEAGUE AND THE EMBLEM

PERHAPS this notation belongs properly in Sergeant Saturn's department, but it is apropos here. Many letters of complaint are coming in concerning the necessity of mutilating the magazine in order to send in coupons and cover name strips for applications and emblems.

We are taking the make-up editor to task about this coupon business and asking him to set up the coupon certificate so that its removal does not delete a couple of inches of story matter on the back. However, if this happens again—and anything can happen in a science-fiction editorial office—simply type off a reasonable copy of the coupon on a sheet of plain paper, fill it out, and mail it in.

As for the emblem, if you do not wish to sacrifice part of the cover, simply en-

close 25c for the emblem, and keep your covers intact. A prudent idea, considering the time of the year, anyhow.

And are those gold-plated, blue and maroon SCIENCE FICTION LEAGUE buttons worth a quarter! You can bet they are. And who wouldn't be proud to wear one? You can obtain yours by sending twenty-five cents in coin or stamps of small denomination (1c, 2c, 3c) to SCIENCE FICTION LEAGUE, 10 East 40th St., New York City, N. Y.

Or—send only 15c, plus the name-strip on the cover of this issue and an additional name-strip from the cover of either of our companion magazines — STARTLING STORIES and CAPTAIN FUTURE.

SPECIAL ANNOUNCEMENT

IT HAS been too long since we have had reports from our various chapters of the SCIENCE FICTION LEAGUE. New charters have been granted from time to time, and a few older chapters have become inactive. For purposes of re-zoning—and issuing duplicate charters where originals have been lost or destroyed—we are asking the secretary or acting-secretary of every chapter of the SCIENCE FICTION LEAGUE to report in by name and number, date of charter, present officers, and list of current membership.

Don't neglect to do this! It is important. A new file is being alphabetically and geographically compiled. Address SCIENCE FICTION LEAGUE, 10 East 40th St., New York City, N. Y.

Which brings us to the end of the stick for this issue. Meantime, if it's an argument you want, write to Sergeant Saturn. Pour out your troubles and woes to him. He can take it—and your suggestions and criticisms (tempered, of course, and diluted by the thousands of you) are of inestimable value in helping us to build THRILLING WONDER STORIES into the magazine which belongs to YOU.

—THE EDITOR.

SCIENCE FICTION LEAGUE.
10 E. 40th St., New York, N. Y.

I wish to apply for membership in the SCIENCE FICTION LEAGUE. I pledge myself to abide by all rules and regulations.

Name .....
(Print Legibly)

Address..... Age.....

City..... State.....

I am enclosing a stamped, self-addressed envelope and the name-strip from the cover of this magazine (tear off name-strip so that the name THRILLING WONDER STORIES and the date can be seen). You will send me my membership certificate and a list of rules promptly.

12-41.

Use U. S. Stamps Only.

WELL, cut my rockets and call me fizzle, if they haven't dumped a lot of announcements, corrections, inquiries, and other chit-chat onto the old Sarge. Trying to make an afternoon gossip society out of this fuel chamber, eh? All right, all right, let's clean it up quickly so we can get down to the regular firing order.

First, somebody said I said Artist Wallace Saaty illustrated "Fatal Asteroid" in the June issue. I'm sorry. Artist C. Lohse did that one. Chalk one more up against me.

Next, I have an inquiry from Kiwi Daniel Choy of Hongkong, China—I hope it's still China—wherein he asks about the Amateur Story Contest, among other things. All I can say, Daniel, is that I refer you to the lions' den in LOOKING FORWARD in this present issue. That should tell you all you want to know. As for your science question, I've turned that over to the science editor who conducts such heavy stuff in the Science Question Box in STARTLING STORIES.

Now comes a special announcement.

4TH WORLD SCIENCE FICTION CONVENTION!

The location of the 1942 WORLD SCIENCE FICTION CONVENTION has been chosen, and it's Los Angeles in 1942! That's right! No sooner had the Daughertys, the Heinleins, Forrie, Morojo and others returned from Denver, than a special meeting was held and things started rolling. If '42 seems a long way away, and if these preparations seem a little premature, it is only because you fans little know the way they do things on the Coast This thing is going to be BIG! With all due respect to New York, Chicago, and Denver, this Convention is going to be all of those in one, with so many extras thrown in that it'll make you dizzy thinking about it.

Already, before any announcement has appeared professionally, fifty fans on the inside have signed up as supporters of the Convention, and others are coming in every day. All readers who want to participate in the Convention should send $1 at once to the Convention Secretary, Paul Freehafer, 349 S. Rampart, Los Angeles. This entitles you to a beautiful membership card, special stickers, etc. *Each member is going to be informed, from time to time and in a most unique manner, of the further progress of the Convention plans!* So whether you're planning *now* to attend or not, send in your $1; for you *will* plan to attend when this thing gets into full swing and more details are forthcoming.

Watch further issues of THRILLING WONDER STORIES for these details.

Meanwhile, a sample copy of the *Pacificonews*, setting forth further facts, is free to all from Convention Director Walter J. Daugherty, 6224 Leland Way, Hollywood, Calif.

Hold onto your gravity belts; here comes another one.

Dear Sergeant Saturn: I wish to herewith announce the formation of the B.S.F.R.S. (British Science Fiction Relief Society), which purpose is to furnish S-F magazines to British Science Fiction fans. I am interested in this project mainly as it will keep alive the interest in S-F in the British empire. As Director I would like to receive names and addresses from S-F fans in the USA or foreign S-F fans. Donations of S-F mags (especially THRILLING WONDER STORIES and STARTLING STORIES) will be especially appreciated as well as unused stamps which will be used to mail the mags. All interested please contact me at once. Sincerely, John M. Cunningham, 2050 Gilbert Street, Beaumont, Texas.

P. S.: The B.S.F.R.S. has the approval of the S-F fan world. Present war conditions make it impossible for British S-F fans to get these S-F mags through any other source.

Phew! What am I, anyhow? A space reporter, or the old space dog! The idea! Wrecking the fireworks of this department with announcements! Anyway, you've had it all in one wad. Now to get down to the old emery wheel business. We'll sharpen our cutting tools and let the sparks fly

In this department we shall publish your opinions every issue. After all, this is YOUR magazine, and it is edited for YOU. If a story in THRILLING WONDER STORIES fails to click with you, it is up to you to let us know about it. We welcome your letters whether they are complimentary or critical—or contain good old-fashioned brickbats! Write regularly! As many of your letters as possible will be printed herein. We cannot undertake to enter into private correspondence.

where they may. But no shooting the arrow into the hot air, mind. Let's have something to chew on, something worth washing down with a swig of Xeno.

Here comes a fellow with an old-fashioned goad—similar to the taureg prods on Pluto.

DATE TROUBLE

By D. W. Boggs

Dear Sarge: Wellman, after scoring with some terrific tales for STARTLING STORIES, rips a TWS yarn from his red-hot mill and rings the bell again! "Island in the Sky" is probably too short to be rated with his other epics—but I enjoyed it immensely. His future civilization seemed especially logical, and yet remained as intriguing as any future worlds that Hamilton or Williamson dreamed up. As Wellman says, the fall of the Airmen civilization does not promise better days under another regime, but I would like to find out if better days are ahead. A sequel would do the trick. MWW's hero, Blacky Peyton, was an unusual hero, but Thora was the poorest excuse for a heroine that I've seen in lo! these many years of S-F reading.

Rocklynne is good as usual. "The Voice" headed the short stories. 'Twas a little bit draggy, but still interesting. "The Purple Bat" with its flippant dialog and tripping action came next. This tale was a sleeper and the last thing I read. The other stories held my attention, but they were not at all memorable. "Plants Must Grow" wasn't bad—for a F. B. Long story, and Curator Carstairs may do as a series character, but again the heroine, Vera Dorn, was somewhat poorly drawn. The other stories were insignificant, especially Rousseau's mess.

The cover was by Belarski; consequently, it was corny. I can't figure out what's wrong with his stuff. I'm looking at his October cover now and musing: What can it be that his art doesn't have? The gorilla qualifies as a BEM, which should make it perfect for a TWS cover. The hero is manly enough and the girl is pretty. Everything's clearcut and colorful. Maybe that's it! Every object on that cover is so clearcut and colorful that they are too artificial-looking. Somehow Belarski's perspective is wrong and he uses too little shading. The cover is flat, artificial, and everything's too incredibly perfect.

Paul did a nice job inside, but not as good as Finlay did on the two shorts. Marchioni and a guy with an unreadable signature did the nauseating rest. Why, why must you tolerate these latter two cartoonists? Sic Wesso onto the short stories and sic the dogs onto Marchioni and this other gent.

Sarge, did it ever occur to you that you have too many departments? Not only that but several departments overlap. Follow this advice and have room for more stories:

Why not (1) Kick the "Swap Column" over to THRILLING LOVE STORIES or some such hades. (2) Make "Headliners in the Next Issue" a part of "Looking Forward" where you would expect to find news of the next issue. (3) Remove the science items from "Looking Forward." After all, you have "Scientifacts" for those notes. (4) Omit "Scientifacts" when you print an article like "Kitchen of the Future."

Recently, you asked that we readers date our letters. Well, I've something to request from you, along the same line: Why not tell us when (or about when) the next issue of your magazines will be out? I'm sure that you would sell more magazines if you did so. With the issues dated so far ahead, it's hard to tell when to look for a new number. A reader who buys one copy of TWS will probably try to buy the next issue. He may look for it the next time he passes the newsstand but he may look in vain and look so often he gets tired of looking. If he knows when TWS will be out, he will hunt for it at the right time. Do yourself a favor and put a notation on the contents page, saying: "Next issue on sale—" 2215 Benjamin Street N. E., Minneapolis, Minnesota.

[*Turn page*]

So you think TWS has too many departments, pal, and that they overlap, huh? Have you been to Washington lately? And how the dickens can I tell when your local newsdealer is going to receive the current issue of this book and slap it on sale? Isn't it enough for you to know that, at present, TWS is bimonthly and therefore appears about every sixty days? How about carrying a pocket calendar, or counting the days off on your fingers and toes? Three complete circuits, and you're in the money. Or three strikes, and you're out! And how about glancing at the date line of your most recently purchased copy before you leave home to prowl the newsstands? Why don't you subscribe and let our circulation department do the worrying for you? Seriously, TWS appears on the stands about the fifth of the even-numbered months—February, April, June, August, October and December.

I've got other fish to fry along about now. Here comes another chap with an argument about cover. You can certainly tell what time of year it is. I haven't had so much bickering over cover since the night a couple of skitars tried to eat the sleeping bags of two space tramps on a Martian desert. Listen to him.

COVER STUFF

By Louis Grus

The First thing to write about is the cover. Keep Belarski on the cover. His covers are always sharp and colorful. Virgil Finlay and Wesso will do for between the cover illustrations.

The October issue of THRILLING WONDER STORIES was excellent. Here is the way I liked the stories of the last two issues.

(1) Island In the Sky
(2) Son of Two Worlds
(3) Purple Bat
(4) In the Ancient Way
(5) Hot Cargo
(6) Plants Must Grow
(7) Masters of Chance
(8) Space Chore
(9) The Voice
(10) Moon Patrol
(11) Appointment In Space
(12) Pettigrew Lives Again

The articles on the calendar and modern kitchen were great. Have more of this type of article. When is the mystery of the pyramids going to be cleared up? When does the next Via series come out? Isn't it about time for another one?

I agree with Daniel King on the size of the magazine but not on the slick paper matter. I noticed that a few magazines have changed to the larger size. So, why can't you? You could at least have a heavier paper.

Why not call the magazine just Wonder Stories?—40 Ella St., Bloomfield, N. J.

Now look, Louis, you're a pretty good pilot and you write a nice spacegram, but you don't think your questions out far enough. There are about six of you worry warts who have been deviling me lately about dropping the "Thrilling" from our name-plate. So you want us to re-christen the old rocket, eh?

Well, kiwi, here is the reason we don't seriously consider that suggestion. THRILLING WONDER STORIES is one magazine in one of our several group units. These magazines are identified by

the word THRILLING in the title. There are other groups which are identified by the words POPULAR, EXCITING, etc. Sure, there are a few strays which defy classification, but you don't get me to toss THRILLING WONDER over into that herd of mavericks. So if you want to ride the rockets in solitary splendor, just kick around the void with STARTLING STORIES and CAPTAIN FUTURE. Some day you must blast up to our central depot and take a glance at about thirty-six lusty pulp yearlings, exclusive of our comics, our crossword books, our picture mags, joke mags, astrology mag, slick mag —and special editions. It takes a tophand to ride in this rodeo. Oh, yeah, you asked about the "Via" series, too. Quick work, lad. Look at the "Headliner" department in this issue.

And speaking of special editions, how—nope! Too many announcements already have made this department top-heavy. I'll save this idea awhile.

Here comes another spaceteer with cover trouble.

WRITERS' ROGUE GALLERY

By Riley Ledbetter

Dear Sergeant: The cover on the October issue was actually putrid, but the issue as a whole was swell. "Island in the Sky" was the best novel since "Power For Zenovia." "The Voice," by Rocklynne, was the best story in the magazine, though.

Why not print a picture of your feature author each month, along with his life story? I, for one, would be glad to have said pictures.

I would like to correspond with members of the Science Fiction League, both male and female.

Some of the birds who are eternally blasting at you and the authors and the magazine must have a warped sense of values. Your magazine rates tops with me, and always will. The only thing I can find fault in is the cover, which is sometimes good and sometimes bad. Please make up your mind which it is to be—507 High St., Winston-Salem, N. C.

Listen, Pee-lot Ledbetter, we mug up STARTLING STORIES with pictures and case histories! Isn't that enough? You go fly your kite over the Himalaya Mountains. Here's a kiwi who doesn't have the same cover outlook at all.

GENERAL OVERHAULING

By Lynn H. Benham

Dear Sarge: If your jug of Xeno isn't empty,

[*Turn page*]

I could use a swig or two; the mercury's running too high nowadays; seems like in a free fall there's nothing much to keep it down.

As I read over the letters in each issue, I can think of a lot of things to write in, but for one reason or another, I never have. Most letters seem to criticize something about the mag, so I guess that's the best thing for a greenhorn to do, and the easiest way is to start at the front and proceed:

The Covers are having more variety of artists lately, so all I can say to that is keep up the good work, and get Paul to do a cover now and then.

The contents page has completely changed from what it used to be, only familiar thing is the SFL emblem in the upper right corner. The Contents page is very efficiently laid out, though.

I don't mind ads in the mag, they're an absolute necessity, most of us realize, but I do enjoy turning over one page from the contents and finding the first story, in other words, the ads should be scattered out.

As for the stories, they are always of differing quality, but too high a percentage of the story space is consistently taken up with low-grade stories.

However, most of the novelettes were good one of those I didn't care much for was "Remember Tomorrow," by Kuttner. To me, he made up for it by writing "The Land of Time to Come."

The Story Behind the Story I do not consider as of much value, and although it is now a little late, I liked the picture strip "Zarnak" and would like to see it reinstated. And, while I'm on this subject, the correspondence corner doesn't cut much figure, either. By all means Sergeant Saturn must stay; I would like to know how he came to be called that.

Everybody seems to have to rate the stories, so I will say that "Island in the Sky" was best. "Hot Cargo," and "Plants Must Grow," were both good, with "The Voice" having a necessary amount of human interest in it.

P. S.: Smooth edges are quite an addition to a magazine, and look at all the paper shavings you would save!—Crothersville, Ind.

Thanks, Lynn. You can have a swig out of my Xeno jug the next time I'm in your port. Comes now a fan mag editor with a word.

MURRAIN ON THREE Bs

By Gerry de la Ree, Jr.

Salutations, Sarge: I have just completed "Island in the Sky," by Manly Wade Wellman in your October issue, and thought I'd bat this letter out immediately. To sum up what I want to say in a few words—the story was swell, one of Wellman's best to date.

The best character in the story was that of Willie Burgoyne. Mr. Wellman made this character really live, a thing that is usually hard for an author to do.

Another thing about the issue I like is the fact that you had Frank R. Paul illustrate the story. While he may not be up to the standards of some artists, he did follow the story quite well. BUT MR. BELARSKI DIDN'T!

Darn it all, put somebody on your covers that reads the story, and ILLUSTRATES it. The cover had Blackie and Thora both in the arena, an event which never happened in the story. Also Mr. Peyton did not use a revolver to exterminate the gorilla, as Mr. Belarski so kindly provided him with. I'm sure Blackie would appreciate Belarski's gesture, but that's neither here nor there.

All that I ask is that you end the Reign of the three B's (Belarski, Bergey, and Brown) over TWS' Covers. Try Paul, Finley, Bok, Wesso, or anybody, but please remove the three B's from circulation.

While speaking of art, I might as well tell you that I liked Finlay's interiors, as well as Paul's, but not Marchioni's. The best illustration in the issue was the one by Finlay for Ross Rocklynne's story, "The Voice."

Before I close, I want to reiterate my statement of several months back as to a Weinbaum Memorial issue of TWS. How about it? A whole issue with all the stories by Stanley G. Weinbaum. That would be a real 15 cents worth in any language.

Well, keep pluggin', Sarge—9 Bogert Place, Westwood, N. J.

What! Declare a boycott on the Bs! What would we do for the BEMs; just have EMs on the cover, eh? So you space-drunk stevedores could make dashes at the covers, huh? Sure, the old Sarge knows this is a little corny, but Gerry is co-editor of *Sun Spots* (reviewed in STARTLING STORIES) and this stuff passes for editorial chatter. Never mind; skip it. Full acceleration ahead. Three planet's ahead.

S.O.S.

By Samuel Benesch

Dear Sarge: The first S. F. magazine I read was the October, 1930, issue of WONDER STORIES. Since then I have carefully gone through every type of S. F. magazine. My preference has frequently switched from STARTLING STORIES to T. W. S. and back again. However,the former ranks higher because of "The Three Planeteers," by Edmond Hamilton (January, 1940). This story is a classic and, as usual, Finlay's drawings were superb.

I loaned the "Three Planeteers" to what I thought was a friend. When it was returned the entire last page (129-130) was gone. Is there any way by which you could furnish me with either this page or its contents? I would greatly appreciate anything you could do in regard to this matter—6201 Harford Road, Baltimore, Md.

Can anybody help this pee-lot out? He's lost part of his astrogation map. Time, also, is growing short, and the fuel is running low. So take four straight blasts of acceleration in a row, and then I'll have a riddle to pop at you.

MORE SCIENCE

By Chandler Davis

My dear Mr. Saturn: The learned, the admirable, the great Sergeant Saturn asks Lester Cole a question: What would the readers squawk about if the covers were improved? Tsk! Ttsk! First on the list would be that selfsame Professor Saturn, to whom pfui. **Then**—if he reads TWS's competitor magazines (I doubt if he reads even TWS itself) the estimable gentleman must realize there is even some room for improvement in the stories! (The thought of a traitor, but true.)

Oh, sure, the August issue was very good. Except for Broome's and Tracy's unsatisfactory offerings, every story was—I might even say superb. "Appointment in Space" was riddled with scientific errors, "Pettigrew Lives Again" with errors of logic almost as bad, though not as demonstrable. But I can pardon two duds.

It's about time you got a good article. Let's have more like **Timetable for Earth.**

[*Turn page*]

The novel was slightly long-winded and rather hackneyed, but still one of Hamilton's best, and quite good enough.

Interior illustrations—adequate, the best being those for "Son of Two Worlds" and "Pettigrew Lives Again." Cover — putrid, reeking, oderiferous; the artist certainly did not read the story.

Well, your last three issues have shown a definite improvement. Were it not for that fact it would be over-optimistic to give suggestions, but after the April, June, and August issues I think you're on the way up. You will please at least one reader if you get a more sober cover, buy stories with more science, and either serialize the novels or put them in small type. Oh, yes, and fire Sergeant Saturn—309 Lake Avenue, Newton Highlands, Mass.

A BREEZE FROM CALIFORNIA

By Joe J. Fortier

Hello there, Sarge! This is inhuman; you're making a liar out of me; I'm in a muddle! First you convince me that Kuttner has enough on the ball to really rise, and now you've got me thinking a certain hack can write terrific novels! I've never read a story of feature-length by Hamilton before that I thought worth the paper it was printed on. I always meet some slap-happy spaceman out saving the world, but this was quite the real thing. (Pardon, while I dish out something to Kathy Baum.) Truly, I thought this novel swell all-around; there was even a reason for having first-rate love interest. Wonders of wonders, it wasn't the usual adolescent drivel. I can see one queer point, though—why the dickens should rubberoid cushions be filled with helium? Try to kid me along by saying that helium is any softer than air, or something else. Another thing: Hamilton has a habit of leaving incomplete sentences floating around quite often.

My allergy to Manly Wade Wellman is dying out—or I'm building up a good resistance. Why? I actually liked "Space Chore." The characters seemed quite human, but I doubt that it was just accidentally so. "Masters of Chance" and "In the Ancient Way" were quite all right; only fair writing, but new twists to a story.

I'd like to take a real broom to "Appointment in Space." The whole thing was so obvious from beginning to end that it galled me, and, what is more, such a melodramatic style was passé about twenty years ago. "Pettigrew Lives Again" was well written as are all of the Tracy stories, but Don can't seem to pick an original theme. This plot rates about second to the 'save-the-world-series.' A Plutonian stinko bean to you, Mr. Tracy; and to you, Sarge, for allowing this stuff to slip into our magazine.

As has been mentioned before, I'd really shell out with the dough for Finlay illustrations. This time was no exception at all. I'm still waiting to see someone better in a pro-mag. I can only sit and revel in the glory of Virgil's beautiful work; **artistry de luxe.** But don't try to sling any Mercurian lingo at me, Sarge; I know an Isip when I see it—and that was an Isip illustration for Wellman's tale. I can only mumble through my ray-seared beard; "Moldymoldymoldymoldymoldy . . ."

Marchioni is still here, but I suppose an old space-dog like yourself just can't shake a pesky flea like him. There's only one artist who is worse, and that is—MOREY! Murphey has a nice style, but it's just so much slop-job work. When it's done it looks like a Saturnian marsh with the heebie-jeebies. I say: **TURN THE RASCALS OUT!** Give us Finlay every issue with Paul, Bok (yes, you heard me), and Wesso as fillers; they're darned good—or I'm a bleary-eyed kiwi.

Also, please note that I no longer give a **(censored)** what you put on the covers. You can place ads for foot-itch there, for all I care. It's hopeless—there'll never be a really good cover, or even two fair ones in a row! I just give up the battle.

The "Story Behind the Story" is swell. Keep it full of interesting notations on the story, and clear of all text-book ramblings on stale science. See what the California weather does

for stf-ideas? Scientifacts are interesting, but here's another artist that belongs on the list: **TURN THIS RASCAL OUT!** Headliners in the Next Issue is better than a big blurb—thanx. Now here's my meat (I don't want Jenkins to get the wrong idea—youngster like him might think anything) in the form of an article, which was a good one. Please give us more like this—this is something that has been lacking for a long-long-long time. "Time-Table for Earth" rates second only to that novel.

"Looking Forward" is still the poorest thing in the way of editorial features. **TURN THE RASCAL OUT!** I can see that you're growing up a little, you old Xeno addict, but you're very slow. I don't see why you tolerate such blarney as this Jenkins guy keeps dishing out—compliments, compliments, compliments; no constructive criticism. Mace and Davis are two boys who can really say something worthwhile. Baum is another one who talks about true stf as much as my ten-year-old cousin. Novak and Cole are two smart boys, though. Well, by the time this sees publication, I'll have returned from the most successful convention in many years: the Denvention. Until the next trip with that batty sarge, I'll just say adios.

I might mention that any "real" fan of science, fantasy or weird fiction would do well to contact Art Widner or Damon Knight in regards to the National Fantasy Fan Federation. Box 122, Bryantville, Massachusetts, for the former, and 650 Marion Street, Salem, Oregon, for the latter. Fans east of Mississippi River contact the former, and those west of there contact the latter. This organization is for "true fans" only, and not for those who merely look for a good dance or just-another-club—1836 39th Ave., Oakland, Calif.

OPEN SEASON ON ARTISTS

By Paul Carter

Dear Sarge: Well, slap me for a row of novae if this isn't a good cover this time! But these artists go just a little too far—this pic has so many mistakes you wouldn't know it.

For instance, why are the Martians differently dressed from the Earthman? (I presume this scene is from Chapter One of "Son of Two Worlds.") And why, when Hamilton says his Martians were "helmeted," does Belarski give 'em armor, too? These artists! Give 'em a mile and they want the whole light year. But the biggest offense is that skull just back of the foremost Martian. Sarge, if you can point out in the story a place where there is a skull in plain sight, as well as a rock-dragon and three men, I'll give you the deed to my asteroid.

If it wasn't supposed to be from "Son of Two Worlds," this cover would be swell! So light a bomb under the art editor's desk. Just a reminder. Oh, yes; and throw in another bomb. No Wesso this time. Why? Was that June cover too much of a strain on him? You can throw in some firecrackers for the infrequency with which Schomburg appears, too.

Wait a minute! I almost forgot! A beautiful bouquet of Venus-ian orchids for bringing back Finlay, and let's have more.

This letter has turned out to be an artistic cannonade, but I'll now turn literary and award the free trip around the galaxy to Hamilton. Don Tracy's short is remarkably close, and the others will pass—by a virus' whisker—with illustrations generally terrible except for Finlay's, which were grand, gorgeous, and stuff.

Bright (?) ideas: give us the Abbott family. Bring back York. And how about a return engagement for the Green Twins who appeared in "Mind Over Matter" and "The Worms Turn?"—156 S. University St., Blackfoot, Idaho.

THE GOOD OLD DAYS

By John T. Ickes

Dear Sarge: I am a member of that rapidly dwindling, seldom heard from, old school that pines for the good-old-days of science fiction.

[*Turn page*]

The days of Paul covers and giant quarterlies, of Dr. Keller and Smith and Campbell, Jr. They put out real fiction in those days, illustratively accompanied by BEMs that make those of today look like Mickey Mice.

Just for old time's sake, why can't we have a cover showing a huge face with all kinds of eyes protruding in all directions? In greens and blues, yellows and reds, and facet the eyes to make them look buggier. It would put some of these upstarts in their place.

Have just finished reading the Aug. issue of T. W. S. The Hamilton novel was supercolossal, as are all his stories. They have an air of reality and suspense that even Binder and Williamson cannot equal. His stories move fast yet they don't leave one the feeling that something is missing. I also enjoyed the short "In the Ancient Way," by Walton. The rest were mediocre.

Now I hope to settle this BEM business once and for all.

I am a socially minded individual and object strongly to the inhuman cruelty inflicted upon the helpless BEMs adorning the covers through no fault of their own. Personally, I like the critters, bug-eyes and all. But I noticed in the Aug. ish. of T. W. S. "Reader Speaks," several letters condemning them to death. These were submitted by Jerry Mace, Katherine Baum, and Lester Cole. It is apparent that these brutes do not know the meaning of kindness and probably throw rocks at old ladies and torture little children. It is the heinous deeds of these and other rogues that necessitate the founding of a noble society to be known as the S. P. C. B. E. M. (Every other jerk in this squirrely column has a screwy society, so why the heck can't I?)

Yes. The Society for the Prevention of Cruelty to BEMs (stated-with-voice-in-rising-crescendo-of-great-emotion-culminating-with-chokes-and-polite-belching). I do hope that this substitution for the lowly meets with Miss Baum's approval. Tut, tut, Miss Baum!

All of you BEM lovers who are interested in the furthering of a good cause; get your

official S. P. C. B. E. M. seal NOW. You can obtain this by merely clipping the tops from three boxes of Ionian Xzrpibrp leaves and send them to me. The seal is a BEM with a winged halo about its head—Houston, Texas.

And there, kiwis, you have an assortment of cheers and jeers—but no free beers. Figure out the answers for yourselves. The old Sarge has a chore of astrogation to do.

Before I dump all you pirates on some nameless dead sun, here's that riddle or inquiry of mine. You continue yapping about bringing back this and that. So how about a whopper of an annual! A THRILLING WONDER ANNUAL replete with long and short stories of the classics—and semi-classics?

Better write in and express yourselves on this subject pretty freely. We won't even think any further than this straw in the wind until we hear in volume from you space rats. What do you want! A big annual? If so, how strong should we go? Twenty-five cents? Fifty cents?

Cut in your rockets and blast in with your comments. The old Sarge will be listening.

And say, you birds, I still prefer typed letters, double-spaced, on one side of the paper—preferably 8½x11 stock—and dated. That makes it easier on your old space dog for inclusion in this department. But I'm not too insistent on this. All that is imperative is that you sign your ethergrams. We can't use anonymous strays.

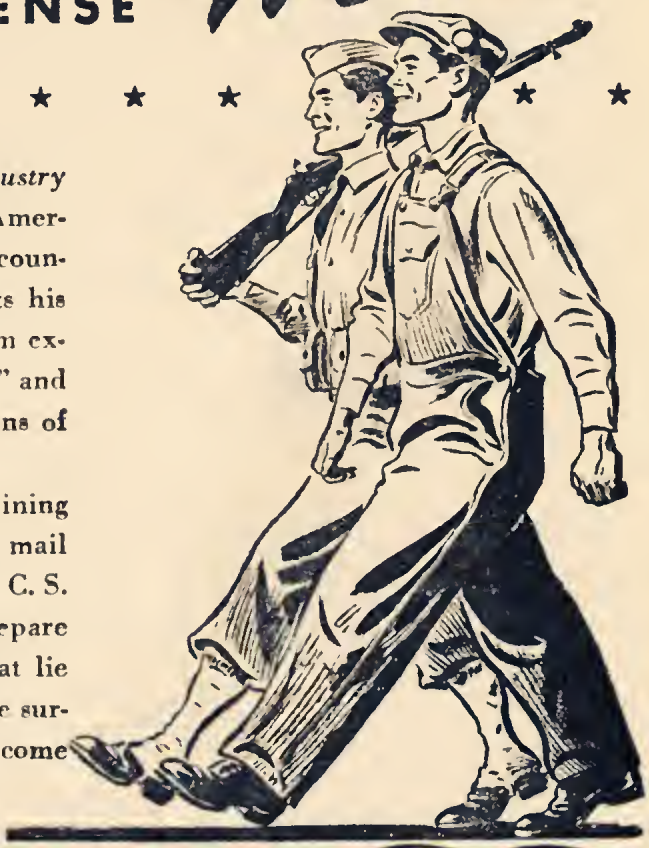
Strays? Here we are back up to our ears in range talk. So I'll be blasting along out Pluto way to round up some more beefs—and a few jugs of Xeno.

—SERGEANT SATURN.

GET IN STEP—NOW!

WITH U. S. DEFENSE

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



TODAY, the *trained man in industry* marches shoulder-to-shoulder with America's armed forces in defense of his country! The man who wilfully neglects his training is a *slacker*—for Uncle Sam expects every one of us to "get in step," and help out-produce the gangster nations of the world!

Would sound, practical, modern training help you do *your* part better? Then mail this coupon, and learn how an I. C. S. Course in your line of work will prepare you for the bigger opportunities that lie ahead—fit you for *success!* You'll be surprised to find how little it costs to become a trained man the I. C. S. way!

INTERNATIONAL CORRESPONDENCE SCHOOLS

CELEBRATE 50 YEARS OF SERVICE TO AMBITIOUS AMERICANS

1891 ★ 1941

BOX 3968-T, SCRANTON, PENNA.

★ Without cost or obligation, please send me a copy of your booklet, "Who Wins and Why," and full particulars about the course *before* which I have marked X: ★

TECHNICAL AND INDUSTRIAL COURSES

- ☐ Agriculture
- ☐ Air Brake
- ☐ Air Conditioning
- ☐ Airplane Drafting
- ☐ Architectural Drafting
- ☐ Architecture
- ☐ Auto Engine Tune-up
- ☐ Auto Technician
- ☐ Aviation
- ☐ Aviation Mechanic
- ☐ Boilermaking
- ☐ Bridge Engineering
- ☐ Chemistry
- ☐ Civil Engineering
- ☐ Coal Mining
- ☐ Concrete Engineering
- ☐ Contracting and Building
- ☐ Cotton Manufacturing
- ☐ Diesel Engines
- ☐ Electrical Drafting
- ☐ Electrical Engineering
- ☐ Electric Lighting
- ☐ Foundry Work
- ☐ Heating
- ☐ Heat Treatment of Metals
- ☐ Highway Engineering
- ☐ House Planning
- ☐ Locomotive Engineer
- ☐ Machinist
- ☐ Management of Inventions
- ☐ Mfg. of Pulp and Paper
- ☐ Marine Engines
- ☐ Mechanical Drafting
- ☐ Mechanical Engineering
- ☐ Mine Foreman
- ☐ Navigation
- ☐ Patternmaking
- ☐ Pharmacy
- ☐ Plumbing
- ☐ Poultry Farming
- ☐ Practical Telephony
- ☐ Public Works Engineering
- ☐ Radio, General
- ☐ Radio Operating
- ☐ Radio Servicing
- ☐ R. R. Section Foreman
- ☐ R. R. Signalman
- ☐ Refrigeration
- ☐ Sanitary Engineering
- ☐ Sheet Metal Work
- ☐ Ship Drafting
- ☐ Shop Practice
- ☐ Steam Electric
- ☐ Steam Engines
- ☐ Steam Fitting
- ☐ Structural Drafting
- ☐ Structural Engineering
- ☐ Surveying and Mapping
- ☐ Telegraph Engineering
- ☐ Telephone Work
- ☐ Textile Designing
- ☐ Toolmaking
- ☐ Welding, Electric and Gas
- ☐ Woolen Manufacturing

BUSINESS COURSES

- ☐ Accounting
- ☐ Advertising
- ☐ Bookkeeping
- ☐ Business Correspondence
- ☐ Business Management
- ☐ Cartooning
- ☐ Civil Service
- ☐ College Preparatory
- ☐ Commercial
- ☐ Cost Accounting
- ☐ C. P. Accounting
- ☐ First Year College
- ☐ Foremanship
- ☐ French
- ☐ Good English
- ☐ High School
- ☐ Illustrating
- ☐ Managing Men at Work
- ☐ Railway Postal Clerk
- ☐ Salesmanship
- ☐ Secretarial
- ☐ Spanish
- ☐ Showcard and Sign Lettering
- ☐ Traffic Management

HOME ECONOMICS COURSES

- ☐ Advanced Dressmaking
- ☐ Foods and Cookery
- ☐ Home Dressmaking
- ☐ Professional Dressmaking and Designing
- ☐ Tea Room and Cafeteria Management, Catering

Name..... Age..... Address.....

City..... State..... Present Position.....

Canadian residents send coupon to International Correspondence Schools Canadian, Limited, Montreal, Canada
British residents send coupon to I. C. S., 71 Kingsway, London, W. C. 2, England

YOUR WHOLE HOUSE WILL BE WARMER, *cozier,* more *healthful* with the New Duo-Therm Fuel-Oil Heater with patented *POWER-AIR*—the most amazing, *new-style* heater ever made! Duo-Therm's new *Power-Air* blower warms your whole house *fast;* gives you comfortable, *even* warmth, *floors to ceilings!* And *Power-Air* is adjustable, to give you just the amount of circulation desired. (Remember: heat that is not *power-driven* floats lazily to the ceiling. But Duo-Therm's patented *Power-Air drives* lazy ceiling heat *down,* keeping floors *toasty-warm! Comfortable!*) Duo-Therm with *Power-Air* saves up to 25% on fuel oil over a heater without *Power-Air.* Duo-Therm will open your eyes to a new standard of clean, *cheap* heating comfort . . . comfort that no other heater can give you! See the new ROYAL model below . . .

DUO-THERM GIVES BETTER HEATING... AND CONSERVES OIL TOO!

An Amazing New Heater, really *two* heaters in one! First: it *circulates* forced warmth to the whole house *fast,* with Duo-Therm's efficient POWER-AIR! Second: with Radiant Doors open, it *radiates* warmth like a fireplace! As sturdy as a furnace . . . as beautiful as any piece of modern furniture!

DUO-THERM...THE MOST POPULAR FUEL-OIL HEATER IN AMERICA!

New Standard of Beauty! New, *modern* styling—new *rounded* contours—new Duo-Tone finish—make the Duo-Therm Royal a lovely addition to any room! The handsomest heater ever made!

New Standard of Efficiency! Now, more than ever before, fuel-oil conservation is important! And Duo-Therm's new, improved *patented* Dual-Chamber Burner, with complete flame control, saves oil . . . gives you *more* heat from every single drop! *And only Duo-Therm has it!*

Extra Features! Handy Front Dial gives just the degree of heat you want. Duo-Therm's *Radiant Doors* open to give floods of "fireplace" warmth! Special *Waste-Stopper* saves fuel. *Coordinated Control* insures proper draft for perfect combustion. *Safe!* Duo-Therms are listed as standard by the Underwriters' Laboratories.

Small Down Payments! Duo-Therm offers a complete line of heaters, all styles, all sizes, 1 to 6 rooms. Easy terms. See new models at your dealer's today! Mail the coupon *now* for complete information!

RADIANT-CIRCULATOR

ONLY $39.95

MODEL 575-2

Model 575-2 Duo-Therm is the perfect answer for room heating comfort. Radiates *and* circulates

TEAR OUT AND MAIL—TODAY!

Duo-Therm Division, Dept. TG-5A
Motor Wheel Corporation
Lansing, Michigan

Send me, without obligation, complete information about Duo-Therm heaters. I am also interested in Duo-Therm *Furnaces* ☐ . . . *Water Heaters* ☐ . . . *Trailer Heaters* ☐ *Ranges* ☐

Name .....

Street .....

City ..... *County* .....

State .....

Genuine-late UNDERWOOD NOISELESS

Now $37.85 CASH

OR EASY TERMS While THEY Last!

MFRS. ORIG. SELLING PRICE $125.00

Truly an outstanding offer! Only because of an exceptional purchase can I sell these rebuilt Noiseless machines at the sensationally low price of $37.85 cash, or at only 70c a week on my easy term price. Each one carefully rebuilt so that it looks like a new machine costing three times as much. *The mfrs. orig. selling price on this Underwood was $125.00.* It's sent to you in Underwood packing box with Underwood book of instructions on care and operation.

A NOISELESS MACHINE

Latest achievement in typewriters! Provides writing perfection with SILENCE. For those who want the advantages of a quiet home or office. This Underwood's Noiseless mechanism eliminates the nerve shattering clatter common to many models. *An aid to better work because it allows clear thinking, reduces fatigue, improves accuracy.* This typewriter disturbs no one, for it is almost impossible to hear it operate a few feet away. You get all the features of an Underwood **PLUS Noiseless typing.**

FIRST CHOICE OF TYPISTS

OVER 5,000,000 UNDERWOODS NOW IN USE! Recognized as the finest, strongest built! Here is an office size Underwood with late modern features that give you **SILENT TYPING.** Has all standard equipment—keyboard, 2 colors, back spacer, automatic reverse, tabulator, etc. **THERE IS NO RISK! SEE BEFORE YOU BUY ON MY 10 DAY NO OBLIGATION TRIAL PLAN.** If you wish send the machine back at my expense.

WIDE 14" CARRIAGES

Wide carriage machines for government reports, large office forms, billing, etc., only $3.60 extra with order. Takes paper 14" wide, has 12" writing line. **A Real Buy in a rebuilt Underwood Noiseless!**

(See Coupon)

International Typewriter Exchange
231 W. Monroe St. Dept. 1288 Chicago, Ill.

EXTRA VALUE!
TYPEWRITER STAND

For those who have no typewriter stand or handy place to use a machine, I make this special offer. This attractive stand that ordinarily sells for $4.85 can be yours for only $3.00 extra —payable 25c a month. **Quality built. Note all its convenient features. (See coupon.)**

NO MONEY DOWN
10 DAY TRIAL
Easy Terms—10c A Day

No obligation. See before you buy on wide open 10 day trial. Pay no money until you test, inspect, compare, and use this Underwood Noiseless. Judge for yourself without hurry and without risk. When you are convinced that this is the biggest typewriter bargain you have ever seen then say, "I'll Buy." Send only 70c a week or $3.00 a month until term price of only $41.85 is paid. Try it first, enjoy a full 10 days' steady use. **There is no red tape or investigation—My offer is exactly as I state it.**

2-YEAR GUARANTEE

I back this machine with my personal 2-yr. guarantee that it is in A-1 condition in every respect—that it will give first class service. Over 30 years of fair dealing and my 200,000 satisfied customers prove the soundness of my golden rule policy and prove that dealing direct with me saves you money.

FREE

Touch Typing Course

A complete home study course of famous Van Sant Touch Typing system. *Learn to type quickly and easily.* Carefully illustrated. Written expressly for home use.

MAIL COUPON NOW · Limited Quantity on Sale.

International Typewriter Exchange, Dept. 1288, 231 W. Monroe St., Chicago, Ill.
Send Underwood Noiseless (F.O.B. Chicago) for ten days' trial. If I keep it, I will pay $3.00 per month until easy term price ($41.85) is paid. If I am not satisfied I can return it express collect. ☐ 10" carriage. ☐ 14" carriage ($3.00 extra)
☐ Check for typewriter stand ($3.00 extra—payable 25c a month). Stand sent on receipt of first payment on Underwood.

Name ..... Age.....
Typewritten signatures not acceptable
Address .....
City ..... State.....
CAUTION—For quick shipment give occupation and reference